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GEORGIA STATE COLLEGE OF AGRICULTURE

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UNIVERSITY OF ILLINOIS

PRESIDENT'S OFFICE

REGISTER, 1908-1909

ANNOUNCEMENTS
1909-1910

SERIAL NO. 101

Announcement of

UNIVERSITY OF ILLINOIS
PRESIDENT'S OFFICE

The Georgia State College of Agriculture

For the Session of 1909-1910
With a Register of Officers and
Students for Session 1908-1909

ATHENS, GEORGIA

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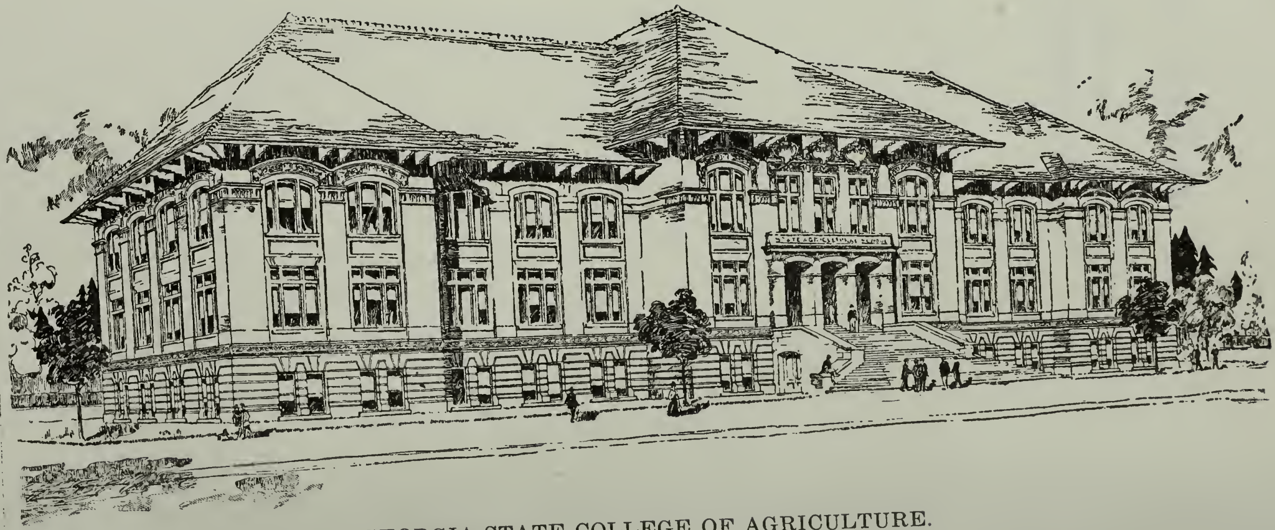

GEORGIA STATE COLLEGE OF AGRICULTURE.

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CALENDAR.

1909.

Sept. 11:	Meeting of the Faculty.
Sept. 13:	First day of Registration.
Sept. 13-16:	Examinations for Entrance.
Sept. 15:	Opening of the First Term.
Nov. 25:	Thanksgiving Day.
Dec. 23:	Close of the First Term.

1910.

January 3:	Opening of the Second Term.
January 3:	Opening of the Cotton School.
January 19:	Birthday of General R. E. Lee.
February 20:	Exercises in commemoration of the 109th Anniversary of the Demosthenian Society and the 89th Anniversary of the Phi Kappa Society.
February 22:	Washington's Birthday.
March 26:	Close of the Second Term.
March 27:	Opening of the Third Term.
April 23-30:	Encampment of Cadets.
May 20:	Last date for submission of prize essays.
June 6:	Meeting of the Board of Visitors.
June 9:	Annual Session of the Board of Trustees.
June 8-10:	Examinations for entrance.
June 11, Saturday:	8:30 P. M., Sophomore Declamation Contest.
June 12, Sunday:	11:00 A. M., Baccalaureate Sermon.
June 13, Monday:	10:30 A. M., Exercises of the Undergraduates Representing the Branches of the University.
	4:00 P. M., Military exercises and Drill.
	8:30 P. M., Champion Debate Between the Phi Kappa and Demosthenian Societies.
June 14, Tuesday:	10:30 A. M., Business Meeting of the Alumni Society.
	12:00 M., Oration Before the Alumni Society.
	4:30 P. M., Junior Oration and Delivery of Sophomore Cup.
June 15, Wednesday:	Commencement Day. Close of the 110th Annual Session.

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1908-09

THE GEORGIA STATE COLLEGE OF AGRICULTURE

HISTORICAL STATEMENT.

The Georgia State College of Agriculture was organized in accordance with the Act of the General Assembly of the State passed July 21st, 1906. This institution is an outgrowth of the State College of Agriculture and the Mechanic Arts, which was founded as a coördinate department of the University of Georgia on May 1, 1872, upon the transference of the funds arising from the sale of Georgia's interest in the landscrip to the Trustees of the University. Its further endowment was made possible from time to time by additional appropriations provided through the generosity of the federal government. The State, however, realizing that agriculture represented its principal industry, decided by legislative enactment to differentiate and endow the work of the Agricultural College in order that it might more fully serve the chief interest of all the people.

The preamble to the Conner Bill contains the following statement, which sets forth fully the reasons for enlarging the work of the State College of Agriculture along both educational and research lines: "Agriculture is the principal industry of the State, and the main source from which the material prosperity of the State must come. Experience has demonstrated the great value of agricultural education in permanently improving the soil, multiplying its yield and increasing the value of its products. There is a growing demand by the people of the State for agricultural education, and for the practical benefits of scientific research in this line, and for improved methods in farming." The law provides that the State College of Agriculture shall be under the direction of a separate Board of Trustees, consisting of eleven men, three selected from the Trustees of the University proper, three from the directors of the Georgia Experiment Station, including the Commissioner of Agriculture, and five from the State at large. The Board has the same functions and exercises the same authority as that of trustees of similarly organized and coördinated divisions of the University, but is subject, in accordance with the provisions of the constitution of the State, to the general control of the University Trustees.

BOARD OF TRUSTEES.

From the Trustees of the University:

J. W. Bennett, Waycross.	Term expires 1910.
J. T. Newton, Madison.	Term expires 1911.
D. M. Hughes, Danville.	Term expires 1912.

From the Experiment Station Board:

L. G. Hardman, Commerce.	Term expires 1914.
T. G. Hudson, Atlanta.	Term expires 1914.
R. C. Neely, Waynesboro.	Term expires 1910.

From the State at Large:

J. J. Conner, Cartersville.	Term expires 1912.
J. L. Hand, Pelham.	Term expires 1910.
L. H. O. Martin, Middleton.	Term expires 1910.
A. J. McMullan, Hartwell.	Term expires 1910.
J. A. Thrash, Greenville.	Term expires 1912.

OFFICERS OF THE BOARD.

J. J. CONNER, President.

A. L. HULL, Secretary and Treasurer.

A. M. SOULE, Assistant Secretary.

EXECUTIVE COMMITTEE.

Messrs. Hardman, Newton, and Martin.

THE GEORGIA STATE COLLEGE OF AGRICULTURE

STAFF OF INSTRUCTION.

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A. M. SOULE, B. S. A., President; Director of Farmers' Institutes.

A. AKERMAN, A. B., M. F., Professor of Forestry.

J. R. FAIN, B. S., Professor of Agronomy.

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R. J. H. DeLOACH, A. B., A. M., Adjunct Professor of Cotton Industry.

T. H. McHATTON, B. S., Sc. D., Adjunct Professor of Horticulture.

L. C. HART, B. S., E. E., Instructor in Farm Mechanics.

H. C. WHITE, Ph. D., D. C. L., LL. D., Professor of Chemistry, Terrell Professor of Agricultural Chemistry.

J. P. CAMPBELL, Ph. D., Professor of Biology.

C. M. STRAHAN, C. and M. E., Professor of Civil Engineering.

J. H. T. McPHERSON, Ph. D., Professor of History and Political Science.

C. M. SNELLING, A. M., Professor of Mathematics.

W. D. HOOPER, A. M., Professor of Latin.

J. MORRIS, A. M., Professor of English Language and German.

J. LUSTRAT, Bach. ès Lett., Professor of Romance Languages.

R. E. PARK, Jr., A. M., Litt. D., Professor of Rhetoric and English Literature.

T. J. WOOFTER, Ph. D., Professor of Philosophy and Education.

J. S. STEWART, A. M., Professor of Secondary Education.

J. M. KIMBROUGH, 1st. Lieutenant, U. S. A., Commandant.

S. V. SANFORD, A. B., Junior Professor of Rhetoric and English Literature.

L. L. HENDREN, Ph. D., Professor of Physics and Astronomy.

J. M. READE, B. S. A., Ph. D., Professor of Botany.

E. L. GRIGGS, Adjunct Professor of Civil Engineering.

U. H. DAVENPORT, B. S., Adjunct Professor of Electrical Engineering.

R. P. STEPHENS, Ph. D., Adjunct Professor of Mathematics.

H. V. BLACK, Ph. D., Adjunct Professor of Chemistry.

R. P. BROOKS, B. A., (Oxon), Adjunct Professor of Georgia History and Sociology.

R. L. McWHORTER, A. M., Instructor in Latin.

W. O. PAYNE, A. M., Instructor in History and Political Science.

M. D. DuBOSE, A. M., Instructor in English Language and German.

S. M. SALYER, A. B., Instructor in Rhetoric and English Literature.

T. FORT, A. B., Instructor in Mathematics.

D. BURNET, Librarian.

SARAH A. FRIERSON, Assistant Librarian.

J. K. GILES, Library Fellow.

C. B. GRIFFITH, Instructor in Cotton Grading.

B. A. CRANE, Instructor in Cotton Grading.

J. W. NAPIER, Assistant in Physics.

H. K. NICHOLSON, Assistant in Physics.

F. VON SPRECKEN, Assistant in Drawing.

A. L. HULL, A. M., Registrar.

P. O. VANATTER, Superintendent of Field Demonstrations.

A. P. WINSTON, Farm Foreman.

ETHEL REESE, Secretary to the President.

ELLEN JONES, Mailing Clerk.

GENERAL STATEMENT.

The Georgia State College of Agriculture constitutes an integral part of the University system, and while it has certain buildings, lands and equipment set aside for the special use of its corps of instructors and students, its work in general is closely associated with the University proper, so that agricultural students enjoy all the advantages which a great university system affords. These advantages include instruction, advice from the professors in other colleges, use of the general libraries and scientific laboratories, and membership in the various class and society organizations. This is most desirable, since classroom training is but a part of a man's education.

The grounds of the Agricultural College proper are situated about a half-mile from the present center of the University. The new agricultural hall was dedicated on January 18th, 1909, with appropriate ceremonies. It occupies a most commanding location on Compton Hill, which constitutes a part of the greater campus. The building is 264 feet long by 72 feet wide, three stories in height, beautifully proportioned, and is, architecturally, a very pleasing and imposing structure. It is constructed of cream colored pressed brick, Bedford limestone being used for the foundation, with terra cotta trimmings in designs symbolical of the purpose to which the building is devoted. The roof projects so as to form wide eaves and is covered with red tile. The building contains 60,000 square feet of floor space and is designed especially for instruction in agriculture and the conduct of research work, the two ends to which it was dedicated. It contains sixty large rooms, and few buildings devoted to agricultural instruction afford better facilities for the work. Provision has been made for administration offices, and for suites of rooms containing offices, private laboratories, class rooms, and student laboratories for the departments of agronomy, animal husbandry, dairy husbandry, cotton industry, horticulture, farm mechanics, veterinary medicine, bacteriology, entomology, and agricultural chemistry. Besides these ten suites of rooms, there are four large class rooms, a library and reading room, and an auditorium with a seating capacity of four hundred. The building is heated by steam and lighted by electricity, and will have the necessary refrigerating apparatus for the manufacture of dairy products, and the investigation of plant and animal diseases.

When properly equipped it will provide suitable quarters for the students of the State College of Agriculture and those charged with the conduct of its work, the lack of which in the past has been responsible in large measure for the failure of agricultural education to make greater progress.

THE LIBRARY.

A good beginning has been made in the formation of an agricultural library. A large number of herd, flock, and stud books of the leading breeders associations have been secured. Special sets of reference books for the use of students have been purchased, and works of general interest on agriculture, animal husbandry, horticulture, cotton industry, and farm mechanics are being added as rapidly as finances will permit. Already there are between 1,500 and 2,000 books and pamphlets available, while the leading agricultural papers and the best scientific journals are received as exchanges, and enable the student to keep in touch with the progress of agricultural thought and investigation in all parts of the world. The importance of the library and its value as an adjunct in the training of the student is fully appreciated, and it is kept open on this account as much of the time as possible, and students are encouraged to use it freely.

LABORATORIES.

The success of a course of instruction in agriculture will depend largely on the thoroughness and efficiency of the training provided in the various laboratories. Much care has therefore been taken in the provision of ample laboratory facilities, and the endeavor has been made to equip the laboratories with the latest and best scientific apparatus. Below will be found a brief description of those laboratories which have been furnished and are ready for use at the present time. It is hoped that the remaining laboratories can be equipped during the summer and autumn so that students attending the College next fall may enjoy the benefits of the special training which they are designed to provide.

AGRONOMY LABORATORIES.

Two laboratories, occupying the east end of the main floor, are used by the department of agronomy. One of these is furnished with center and wall desks and laboratory tables for soil work. A complete equipment of soil tubes, shakers, centrifuges, water baths, and ovens has been provided so that each student may work out the problems assigned him independently. The apparatus is used in a series of experiments designed to give the student an insight into the physical and mechanical condition of the various types of soils occurring in the State.

The other laboratory is devoted to the study of farm crops, including seed testing, cereal judging, grasses and forage crops. It is provided with wall cases for specimens, and laboratory tables for the use of the students. Various kinds of seed racks and seed testing apparatus constitute a part of the equipment. A sufficient supply of sieves, magnifiers, and microscopes are available for the prosecution of the various lines of work, and ample facilities are given all students who wish to specialize.

ANIMAL HUSBANDRY LABORATORIES.

In the College building about seven thousand feet of floor space has been set aside for laboratories to be used in theoretical and practical instruction in dairying. Sufficient funds have not been available to equip this department fully up to the present time, though enough apparatus has been secured to get the work well under way. In the butter making laboratory there are various makes of separators, both hand and power, which not only give the student a knowledge of how to set up and operate centrifugal separators, but enable him to determine from actual tests the make, type, and capacity of machines that will best meet his individual needs, both for factory and farm dairies. So far this laboratory has been equipped more in the nature of a farm dairy than as a centralized creamery, and the churns and butter workers are of small capacity. Factory machines will be installed later.

The milk testing laboratory is a well lighted, spacious room, in which there are several models of Babcock testers, both hand and power design. The importance of a rapid and accurate means of determining the amount of butter fat in skim milk, whole milk, and cream has become duly recognized, and no one, either producer of milk, or manufacturer of butter and cheese, can successfully conduct his business without being familiar with this test. Various tests for determining the lactic acid content of milk are available, and the students are made thoroughly familiar with this important phase of successful dairying. In addition to the above tests, facilities are provided for instruction in determining the solids not fat, as well as making curd tests.

In the cheese making laboratory instruction will be given in making, storing, and selling the different American and Swiss cheeses. This laboratory will be ready for use next year.

In recent years, under prevailing market conditions, the necessity for sanitary, wholesome dairy products that will stand long storage and transportation by rail has increased to such an extent that the pasteurization of milk and cream has become one of the important branches of the dairy industry. For this reason a separate pasteurizing laboratory has been provided in the dairy department.

In the production of palatable, sanitary dairy products which will command the highest prices on the open market, it is necessary that the producer have some means of controlling the temperature of the milk during different stages while it is being prepared for the consumer, or in the ripening, storing, and holding of the different dairy products. Ample refrigerators have been provided for conducting experimental work along these lines.

Herd, flock, and stud books of most of the leading breeders' associations have been secured, so that the students are familiarized with the different methods and forms of tabulating and keeping pedigrees. These books are used as a supplement to the work in animal breeding, in familiarizing students with the combinations of blood lines that have gone to produce the highest type of animal.

On the College farm several breeds of live stock are maintained. Accurate records of their feed and production are kept, and the various experiments in breeding and feeding supplement and verify the work given in the laboratory and class room.

HORTICULTURAL LABORATORIES.

There are three laboratories in this department. A student laboratory and a private laboratory are in the Agricultural College building, and the third, a spraying laboratory, is in process of construction on the horticultural grounds, which are located about two hundred yards southeast of the building. The students' laboratories will accommodate about thirty men, and are rapidly being fitted up with the necessary apparatus. The private laboratory, containing a culture room, fume hoods, and other essential fixtures, is reserved for research work pertaining directly to horticulture. In the office of the department, which connects the student and private laboratory, is a vault for the safe keeping of records and other valuable papers. Besides the above, there is now being built a barn and tool-shed, which will afford ample room for the storage of all implements necessary on a fruit farm.

COTTON INDUSTRY LABORATORY.

A systematic study of cotton fibre with a view to the improvement of the fibre and the increase in yield, depends upon laboratory facilities, and as the courses offered in the department of Cotton Industry will be largely laboratory courses, provision was made for every known facility for conducting the work. Possibly it will be some time before all apparatus incident to the work can be purchased, but the laboratory is fitted with strictly up-to-date equipment, and is in perfect working order. Ample facilities are offered for a study of the modern methods of bleaching and mercerization, and for experiments in dyeing the cotton fibre;

for combing and mounting the different varieties of cotton in a comparative study of individual merit; for an investigation of the basis on which classification and grades of lint cotton depend; and for ascertaining the breaking strength of the individual fibres of all varieties and grades. For a study of the nature of cotton fibre the best and latest model student microscopes are used.

In connection with this department there is also a research laboratory to which graduate and special students have access. This laboratory was designed to work out problems of a more general nature as they arise in connection with the study of cotton breeding, the nature and causes of the loss in connection with milling cotton, and the like. Located as it is, in the centre of the cotton belt, it is believed that this laboratory will prove ideal for working out all problems connected with the South's greatest industry.

FARM MECHANICS LABORATORY.

The farm mechanics laboratory is located in the basement at the east end of the College building. It is equipped with twelve wood working benches, two Barrus lathes, one a wood turning lathe and the other a combination wood and iron turning lathe, four Buffalo Forge Co.'s latest improved forges, complete, with coal and water boxes, and all necessary forge tools. There is also a full equipment of agricultural machinery.

Each wood working bench is fully equipped with chisels, mallet, hammer, saws, and all other tools necessary to give the student a full knowledge of their care and use.

In addition to the lathes in the wood working department, there is a 20-inch band saw and a combination rip and cut-off saw table.

The lathes are the best that can be had for the purpose for which they are intended. A thorough course in wood turning will be given.

The forge work will consist of welding and tempering, and the course will be extended as far as possible.

The agricultural machinery will be fully studied, and the classes are required to take apart and assemble the different pieces that go to make up the machine or implement.

With the two Bostrom & Brady levelling sets in the laboratory the students are required to make surveys of different plats of ground for the determination of the best methods of tile drainage; also to run terraces, lines of levels along proposed roadways, and to plot the profiles and figure the proper grades with regard to the cuts and fills.

The laboratory has a full line of plumbing material, and the classes will be required to assemble and calk up a "lay out."

THE COLLEGE FARM.

Contiguous to the building and extending in the rear for more than a mile lies the College farm, consisting of 830 acres. This land is varied in character; some of it is rough and broken, while other sections are fairly level; portions are well wooded, and a diversity of soils are met with. This is not objectionable from one point of view, as it will enable tests to be made which will be applicable to the types of soil found in many sections of the State.

For a number of years a large part of the land has been rented and handled in a very careless manner. No crop rotation has been followed, and very little live stock has been kept on the farm. As a result, the land is badly eroded in many places, and in poor physical condition. Winter and summer legumes are now being grown for the purpose of adding nitrogen and humus to the soil. Attention is being given to the construction of terraces and drains, and much loose stone and trash has already been removed from the land. While these operations are costly, they form an excellent object lesson for students in the reclaiming of exhausted soils, and it is only a question of time when the farm will be put on a highly satisfactory basis from both a physical and a financial standpoint.

The farm has been accurately surveyed and mapped; first, with the idea of beautifying it as fast as funds become available by laying out the necessary roads and walks and locating such additional buildings as will be required from time to time with due regard to desirable landscape effects; and second, by the U. S. Department of Agriculture, so that all the soil types found might be defined and their physical characters ascertained. Thus when experiments are undertaken combining a physical and chemical study of the soils, results of accuracy and value may be expected.

THE COLLEGE BARNS.

The funds available for the erection of barns were so limited that these structures have been made very plain, though substantial. As the cost of these buildings is low, they can be copied advantageously by any farmer, a consideration of much practical importance. The dairy barn is 40x70 feet, and contains stalls for thirty cows and seven horses, besides two box stalls. There is also an office, a milk room and a boiler house. A 130-ton silo is connectd with the barn by a feed mixing and weighing room, and there is ample space for the storage of rough feed. A bull house, the necessary paddocks for young stock, a blacksmith shop, machine shed, and individual hog houses have also been erected near the dairy barn.

The department of field demonstration has a barn 40x70 feet, which contains stalls, an implement shed, an office, and a store room for feed, fertilizers and selected grains. The upper floor is devoted to the storage of the special crops grown on the plats, of which careful records must be kept to furnish reliable data for the student and the farmer alike.

On the horticultural grounds there is under construction one main barn for housing the work stock and feedstuffs, an implement shed, and a fertilizer mixing and spray house, which also constitutes a laboratory for students.

Barns for feeding beef cattle and for horse breeding and other purposes will be erected as soon as funds will permit.

THE COLLEGE HERDS.

The establishment of herds and flocks is a rather expensive undertaking, and the limited funds available made it necessary for the College to exercise care and discretion in the organization of this feature of its work. Substantial progress is being made, however. Six pure-bred Jersey cows and one bull have been purchased, and in addition there are forty grade Jerseys in the herd. The Holstein herd consists of five females, one bull, and one grade heifer. The dairy herd is thus being brought up to an efficient status very rapidly.

A herd of pure-bred Tamworths (representatives of the extreme bacon type of hog), and Berkshires are maintained on the farm. Experiments in cross-breeding are now under way, as well as feeding trials to determine the efficiency of various grazing crops for producing pork cheaply.

A total of fifteen head of work animals are owned by the College farm. These mules are of superior excellence, and represent different types, including medium heavy plantation mules, sugar mules, and heavy draft mules. The department of animal husbandry is thus on a substantial foundation, and the securing of representative breeds of stock by the College means that the students are receiving the best possible training in the handling and management of live stock, and in stock judging. The students are brought into intimate contact with the live stock kept on the farm, and it is for this reason that the College authorities are particularly anxious to develop a horse breeding establishment and a herd of beef animals, which will include types of two or three leading breeds adapted to Georgia. All the breeding and feeding work has been done on a commercial basis, and as the revenue from the dairy herd is exceedingly gratifying, this department can be expanded with but little additional expense.

THE DEMONSTRATION FIELD.

A field of twenty acres has been set aside for experimental work. This area of land has been subdivided into more than 1,000 plats, ranging in size from 1-50 to 1-10 of an acre. Through the medium of this experimental field Nature is constantly being asked questions, and new facts of interest are being brought to light by actual field tests; the value of principles and theories developed through laboratory research is determined, and thus the education of the student is made more perfect and complete, since he not only receives instruction in theory in the class room, but has the underlying scientific principles fully demonstrated to him in the laboratory, and sees the actual results which follow the application of these principles in farm practice.

Much attention will be given in the demonstration field to the development of strains of cotton, corn, and other farm crops of better quality than those ordinarily grown. The relation of fertilizers to crop production, the influence of various methods of cultivation, the value of crop rotations, and the merits of new and interesting varieties of farm crops will be fully tested, and not only will they be made a part of the knowledge of the student body, but the results will be prepared in pamphlet form and distributed free of cost to the farmers of the State. This feature of the work will thus be made to serve several useful and important economic purposes, as well as to provide that definite character of training which is one of the greatest services to the agricultural students.

In connection with the Department of Cotton Industry, there will be special plats set aside for conducting experiments in cotton breeding, both by selection and hybridization, and students will be given opportunity to see the results of their own experiments. There will also be arranged a variety test of all the leading varieties of cotton, and during the growing and harvesting seasons students will be required to write full descriptions of varieties, in order that they may be able to distinguish one variety from another, and at the same time acquire the habit of studying the cotton plant.

ORCHARDS AND GARDENS.

About thirty-five acres of the College farm have been set aside for horticultural purposes. The land is rolling, and, with the exception of one or two acres of sand, which will serve well for truck crops, the soil is red clay. The field has been plotted and a beginning made upon the variety orchard, in which all the varieties of apples, pears, peaches, plums and other fruits recommended for this section will be well represented, so that a comparative study of their qualities can be easily made. As rapidly as funds will permit, a truck garden will be brought into shape, experimental plats laid out, a commercial orchard planted, and a plantation of small fruits started. For the benefit of the fruit growers at large the horticultural grounds will serve as a testing field for all new varieties and also as a laboratory in which to experiment upon and demonstrate to the students all practices of orchard and garden management.

THE COLLEGE FOREST.

About 150 acres of the College farm are under woods. There are also several acres, cleared by the former owners, that are not well adapted to the production of field crops. The wooded portions are being brought under systematic forest management, and the non-agricultural cleared lands are being reforested. An excellent opportunity is afforded for the study of forestry as applied to farm holdings.

THE AGRICULTURAL CLUB.

The students of the College have an organization of their own, known as the Agricultural Club, which meets every two weeks for the discussion of various agricultural topics. The purpose of the society is to obtain drill in parliamentary practice and in declamation and debate, as well as to discuss the scientific and practical phases of many important agricultural problems. The club publishes a Quarterly, which is not only distributed quite widely among the student body, but is circulated over the State. This publication forms a desirable medium of communication between the students and the farmers, and furnishes useful literary training to the students as well.

FEES AND EXPENSES.

Attention is called to the remarkably low cost for which a man may take a full collegiate year in the college. By rooming in the dormitories a young man can live at the University almost as cheaply as at home. This should encourage a large number of young men to avail themselves of the special advantages which the four years' course or the one year course will confer upon them.

These expenses are as follows:

Room rent in college dormitories $2.00 per month. This includes electric lights, heavy furniture, and care of room. The students provide fuel, mattress, bed furnishings, and toilet articles. Board in Denmark Dining Hall costs $9.00 a month on the coöperative plan. Room rent and board are paid monthly. Furnished rooms in private families may be secured for from $2.50 to $5.00 a month for each occupant.

Laundry will cost about $1.25 a month and books about $10.00 a year. All students are required to join one of the Literary societies, the initiation fee being $2.00.

Uniform for the military department will cost about $16.00. This will last two or three years.

In short, the necessary expenses of a student for the college year of nine months need not exceed $150.00.

Expenses for short term students are in proportion to those for long course students. The cost of attending the Cotton School will vary from $15.00 to $25.00, due chiefly to the variation in railroad fare.

PUBLICATIONS.

The Georgia State College of Agriculture through its extension departmnt publishes circulars of information on pertinent topics from time to time. These circulars are distributed free of cost to farmers residing in the State. A series of educational bulletins is now in course of preparation, and at least four will be distributed during the year. These will summarize in a practical manner the results of investigations, for example, with commercial fertilizers, and will prove especially valuable for reference to all progressive farmers. It is expected that this series will be developed from year to year until eventually a first-class reading course and farmer's library will be the result. Press bulletins are also sent out each month to all the papers of the State. Thus the College is taking an active part in endeavoring to disseminate the vast fund of useful information which has accumulated as a result of the researches of the agricultural colleges and experiment stations within the last few years.

PRIZES AND SCHOLARSHIPS.

Through the generosity of the various friends of agricultural education the following scholarships and prizes have been offered to students. The coöperation of the good friends who have made it possible to offer these prizes is heartily appreciated.

LIST OF PRIZES

Awarded at Commencement, 1909.

Junior Scholarship, $50.00 in gold, given by the Virginia-Carolina Chemical Co., Richmond, Va., to the student showing the greatest proficiency in all agricultural subjects for the College year, 1908-1909.

Sophomore Scholarship, $40.00 in gold, given by the Virginia-Carolina Chemical Co., to the student showing the greatest proficiency in all agricultural subjects for the College year, 1908-1909.

Freshman Scholarship, $25.00 in gold, given by the Virginia-Carolina Chemical Co., to the student showing the greatest proficiency in all agricultural subjects for the College year, 1908-1909.

One year agricultural course, $25.00 in gold, given by the Virginia-Carolina Chemical Co., to the student showing the greatest proficiency in all agricultural subjects for the College year, 1908-1909.

$25.00 in gold from the Board of Trustees to the student writing the best essay on "The Progress of Agricultural Education in the United States."

$50.00 in gold, given by the Empire State Chemical Co., Athens, Ga., to be divided into three prizes of $25.00, $15.00 and $10.00 respectively, for the best essays on "The Use, Benefits, and Application of Fertilizers."

$10.00 in gold, given by the German Kali Works, New York, to the student writing the best essay on "Potash and Other Plant Foods."

$10.00 in gold, given by the DeLaval Separator Co., New York, to the student showing the greatest proficiency in the handling of cream separators.

$10.00 in gold, given by T. W. Wood & Sons. Richmond, Va., to the student in the one-year agricultural course writing the best essay on "Farm Crops."

TERMS OF ADMISSION.

Four-years' Degree Course. The requirements for admission to the four-years' course are similar to those for all other students entering the University.

A brief summary of these requirements is here given:

A study of English Grammar, Rhetoric and a number of English Classics, as Shakespeare, Milton, Tennyson, 3 units.

A study of Arithmetic, High School Algebra and Plane Geometry, 2½ units.

A study of two of the following history groups: Ancient History, English History, American History and Civics, Modern History, 2 units.

A study of a foreign language, either Latin, German, French, Spanish or Greek, 2 or more units.

And 4½ units (of which three may be for agriculture), from the following: Elementary Physics, Physical Geography, Botany, Chemistry, Drawing, Agriculture, Physiology, Zoölogy, History and a foreign language.

This makes a total of fourteen units for full admission to the Freshman class. No student will be admitted with less than 10 of these units, the other 4 units being made up later in the course by outside study or extra studies.

For full outline of entrance studies the student is referred to the General Catalogue of the University, or to the Principal of his school.

Students from Accredited Schools will be admitted on a certificate from the principal covering the work done. On work not thus certified students must stand examinations to determine their qualification to carry forward college work.

Special One-year Course.—Students 16 years of age and over are admitted to this course without examination, at the discretion of the executive officers of the college. They must, of course, have a good common school education in order to benefit by the instruction provided, and must be diligent and faithful in the prosecution of their studies. These are not candidates for degrees.

Three-Months' Course.—The three months' course is an integral part of the one-year course, and so arranged as to permit farmers and farmers' boys 16 years of age and over to attend the college for a period of three months in the winter season when work is not pressing, and obtain a large amount of practical training based on correct scientific principles at a minimum cost. No entrance examinations are required for this course.

Farmers' Short Courses, Cotton School, etc.—These courses are open to any person over 16 years of age in the State, but are designed mainly for farmers of mature years who cannot spend more than ten days away from home during the winter season. The cost of these courses is reduced to a minimum, and they are intensely practical in character.

CONFERENCE FOR FARMERS AND FARMERS' WIVES.

An annual conference is held during the month of January for the purpose of bringing the farmers and their wives more intimately into touch with the work of the College. The conference lasts for a week, and during that time a great variety of topics are discussed. The Farmers' Conference is a modified school, with its work so adjusted as to give the busy farmer and his wife a pleasant holiday outing, and at the same time enable them to acquire information which will be of service to them throughout the year.

THE ROAD SCHOOL.

The Road School is designed to acquaint those charged with the construction of public highways under the new convict law with the principles underlying the construction of good roads. It lasts for one week and any citizen in the State interested in this subject will be permitted to enter on the payment of the registration fee of one dollar. The course offered will be especially helpful to road overseers and county commissioners.

SELF HELP.

It is the purpose of the College to encourage students to work as much of their time as possible for both economic and practical reasons. In this way the cost to the student may be reduced considerably, and his knowledge of how to apply scientific principles in farm practice may be materially broadened. It it both important and necessary that labor with the hands should be recognized as honorable and essential to the welfare of an agricultural people.

Students in the College of Agriculture have the same opportunities of securing help from the Charles McDonald Brown Scholarship Fund as those in other departments of the University at Athens. The interest on this fund is lent to worthy young men on condition that they obligate themselves to return it with four per cent. interest. Applications for scholarships should be made to the Chancellor of the University. A special circular of information concerning the fund and blank forms of application will be supplied on request. This fund makes it possible for many young men of limited means to take advantage of the opportunity which the College offers for securing an education.

OBJECTS OF THE COLLEGE.

The purpose and plan of the Agricultural College is, first, to train agricultural students in the sciences pertaining to correct farm practice in order that they may receive a thorough and liberal education; second, so to arrange the course of instruction that men of limited means, opportunity, and education may receive the greatest practical benefit by attending courses of varying length provided for in the College; third, to take an active part in the dissemination of agricultural knowledge among the farmers of the State by means of extension teaching, farmers' institutes, and bulletins and publications of a popular and practical nature.

COURSES OF INSTRUCTION.

The four-years' course provides for a liberal and thorough training along scientific lines in agronomy, soil fertility, animal husbandry, dairy husbandry, horticulture, farm mechanics and cotton industry. General training in chemistry, physics, botany, biology, English and mathematics is also provided. Since the field agricultural training is so broad that it is quite impossible for a student to pursue all the courses offered in four years, certain fundamental studies are prescribed, and the largest liberty of selection commensurate with the best interests of the student permitted. In this way the student is enabled to select a course which is more in keeping with his taste, and at the same time he can obtain sufficient special training to fit him better for the special line of work he desires to pursue upon graduation.

The one-year course is provided for men who have only a limited amount of time and money at their disposal, and who in many instances have not the fundamental training which would enable them to pursue a four-years' course of study advantageously. Men of this class, however, who desire to farm can improve their knowledge and ability to manage farm problems intelligently by pursuing this course at a moderate cost. Naturally, the training provided for in this course is of a more restricted and practical nature, as its character and intention make necessary.

The three-months' course and the ten-day courses and conferences are provided for those actually engaged in farming or interested directly or indirectly in it who desire to obtain the largest amount of practical knowledge which they can apply immediately and with profit, at a minimum of cost. These courses confer vast benefits upon all who pursue them, and are to be commended particularly to men varying in age from 25 to 60 years who have not had the benefits of agricultural training in the past, and are therefore at a loss to know where to look for information and very often how to apply it successfully even after they have acquired it.

SPECIAL COURSE IN COTTON INDUSTRY.

The Department of Cotton Industry is a newly organized department in the State College of Agriculture, and is designed to meet the special needs of a cotton growing community. Students, threfore, who are desirous of specializing in the work will have the opportunity of electing all the courses of instruction offered by the department, provided they select from allied subjects a sufficient amount of work to meet the University requirements.

DEGREE.

The degree of B. S. in Agriculture is conferred upon all students who successfully complete the four-years' course. An outline of the long course in agriculture follows, giving in detail such information as students who desire to pursue it will find most helpful. Those desiring special information relative to any phases of the work prescribed below are invited to write to the College authorities for it.

BACHELOR OF SCIENCE IN AGRICULTURE.

Freshman.		Sophomore.	
Agronomy, 1	2 hrs.	Animal Husbandry, 2, 3, 4 and 5	5 hrs.
Animal Husbandry, 1	1 "	Botany, 1	3 "
Farm Mechanics, 1, 2, 3 and 4	3 "	Chemistry, 4	3 "
Horticulture, 1, 2 and 3,	3 "	History, 2 or 4	3 "
English, 2	3 "	English, 3	3 "
Chemistry, 1	3 "	Mathematics, 2 and 3	3 "
Mathematics, 1	3 "	Zoölogy, 1	2 "
Military Science	1 "		
	19 hrs.		22 hrs.

Junior.

Required.

German, 4 or French, 1	3 hrs.
Physics, 1	3 “
Agronomy, 5 and 6	4 “
	10 hrs.

Elective from

Groups 1, 2, 3, 4, or 5,	10 hrs.
	20 hrs.

1. General Elective.

Botany, 2	4 hrs.
Engineering, 1	3 “
Farm Mechanics, 6	1 “
Agronomy, 3 and 4	2 “
	10 hrs.

2. Agronomy Elective.

Botany, 2	4 hrs.
Agronomy, 3 and 4	2 “
Agri. Engineering, 5	1 “
Cotton Industry, 4 and 5,	3 “
	10 hrs.

3. Animal Husbandry Elective.

Zoölogy, 2	4 hrs.
Animal Husbandry, 6, 7 and 8	*2 “
Agronomy, 3 and 4	2 “
Agr. Engineering, 5	1 “
	9 hrs.

4. Horticulture Elective.

Botany, 2	4 hrs.
Horticulture, 4, 5, 6, 7 and 8	6 “
	10 hrs.

Senior.

Required.

German, 5 or French, 5	3 hrs.
Economics, 14, 15	3 “
Cotton Industry, 6	1½“
or	
Farm Mechanics, 7 and 8	1½“
Geology	1½“
or	
Forestry	1½“
	9 hrs.

Elective from

Groups 1, 2, 3, 4, or 5,	10 hrs.
	19 hrs.

1. General Elective.

Zoölogy, 3 and 5	4 hrs.
Animal Husbandry, 6, 7 and 8	2* “
Cotton Industry, 4 and 5,	3 “
	9 hrs.

2. Agronomy Elective.

Botany, *3, 4 or 5 or 6,	4 hrs.
Agronomy, 7	3 “
Cotton Industry, 7	3 “
	10 hrs.

3. Animal Husbandry Elective.

Zoölogy, 3 and 5, or Veterinary Medicine	4 hrs.
Animal Husbandry, 9 10, 11 and 12	6 “
	10 hrs.

4. Horticulture Elective.

Botany,* 3, 4 or 5 or 6,	4 hrs.
Horticulture, 9, 10, 11	5 “
Farm Mechanics, 5	1 “
Cotton Industry, 5	1 “
	11 hrs.

5. Education Elective.		**5. Education Elective.**	
Botany, 2 or Education 1 and 2	4 hrs.	Education, 1, 2, or 3	3 hrs.
Psychology, 1 and 2	3 "	Animal Husbandry, 6, 7 and 8	2* "
Agronomy, 3 and 4	2 "	Cotton Industry, 4 and 5,	4 "
Agricultural Engineering, 2	1 "		
	10 hrs.		9 hrs.

*Two extra laboratory periods in third term.

Note.—All laboratory periods count as one hour for two, and are included on that basis in the total number of hours required in each year.

In order to associate the agricultural students more intimately with the work of the College in the Freshman and Sophomore years, the mathematics formerly given in the Freshman year has been divided so that one-half is now taken in the Freshman and one-half in the Sophomore year. The language formerly required in the Freshman and Sophomore years has been moved to the Junior and Senior years. By this arrangement, training in certain agricultural subjects has been provided in both the Freshman and Sophomore years.

To permit of greater specialization on the part of students, a certain amount of work is required in both the Junior and Senior years, and five groups of electives have been arranged for. By this means the student may pursue a more or less general course of instruction during the Junior and Senior years, or specialize in Agronomy, Animal Husbandry, or Horticulture. Students desiring to specialize will be required to elect a major group in the Junior year, and continue the study of the coördinated courses in the Senior year. Thesis work will be required for graduation, and must be associated with the major study elected in the Junior year. The work done on the thesis will not reduce the number of units required during the senior year.

BACHELOR OF SCIENCE. (Forest Engineering).

The degree of Bachelor of Science in Forest Engineering is given upon the completion of the studies outlined below. These studies have been chosen for their cultural as well as their professional value.

It is probable that the strictly professional studies will eventually be made post-graduate work, leading to the degree of

Forest Engineer (F. E.); but at present only the bachelor's degree is given.

Freshman.

	hrs.
Drawing, 6	3
English, 2	3
History, 2	3
Latin, 1	
or	
German, 2	3
Mathematics, 1, 2, 3	6
	18

Sophomore.

	hrs.
Engineering, 1	3
Drawing, 7, 8	2
English, 3	3
Latin, 2	
or	
German, 3	3
Mathematics, 4, 5, 7	4
Physics, 5	3
	18

Junior Camp.

	hrs.
Forestry, 4	6
Forestry, 5	6
Forestry, 6	2
Forestry, 7	2
Forestry, 9	2
	18

Junior (At Athens).

	hrs.
Chemistry, 2	3
Selected Parts of Civil Engineering, 2, 3	4
Drawing, 9	2
Biology, 3, 6	6
Forestry, 4	3
	18

Senior Camp.

	hrs.
Forestry, 4	6
Forestry, 5	6
Forestry, 6	2
Forestry, 7	2
Forestry, 9	2
	18

Senior (At Athens).

	hrs.
Geology, 1	1½
Economics, 11, 12	3
Forestry, 5	3
Forestry, 6	1
Forestry, 7	1½
Forestry, 8	6
Forestry, 9	2
	18

AGRONOMY.

J. R. FAIN, Professor.

P. O. VANATTER, Instructor.

1. **Cereals.**—This includes a history of the cereals and the environment under which they have been developed. The methods of improvement and the adaptation to different environments will then be considered. The different methods of culture, the uses of the leading cereals, the best methods of cultivating the same and their adaptation to soil areas of the State are considered. Two hours. Second and third term. Freshmen.

2. **Cereal Judging.**—This is a laboratory course in which a study is made of the different types and varieties of the various cereals by means of the score card. Considerably more time will be spent with corn than with other cereals. A study is made of the various market grades of the different cereals. Germination tests are carried on in connection with this work. One laboratory period. Second and third term. Freshmen.

3. **Farm Management.**—Methods of systematizing farm business are considered in detail. The various systems of farming, as well as the influence of various crop rotations are studied. Special attention is given to factors controlling the market prices of farm produce including an examination into the various methods of buying and selling by coöperation. The student will be required to read the following books: How to Choose a Farm, by Hunt; Rural Wealth and Welfare, by Fairchild; The Farmers' Business Hand Book, by Roberts. Two lectures and one laboratory period. First term. Junior.

4. **Grasses and Forage Crops.**—The different varieties of grasses and forage crops are studied with reference to their yield, composition, and feeding value. Special attention is paid to those grasses and forage crops that are adapted to southern conditions. As silage is undoubtedly the cheapest form in which forage crops can be preserved in this state, considerable attention will be given to the crops best adapted for silage, the best method of handling the crop, and harvesting it. Three hours. Third term. Junior.

5. **Soil Physics.**—The several geological formations will first be studied to determine the character of soil derived from the weathering of each type. Laboratory experiments with the principal soil types of the state will be made, to determine the physical properties of each specific area. Text: Soils, by Hilgard. In addition students will be expected to read Huxley's Physiography and King's Agricultural Physics. Two lectures and two laboratory periods. First half year. Junior.

6. **Soil Fertility.**—A study will be made of deterioration of the various soil types of the state and methods of reclaiming them. The elements of plant food in the soil and in fertilizers will be considered. Special attention will be given during the latter part of this course to commercial fertilizers. Students will be expected to read How Crops Feed, by Johnson, and Chemistry of Plant and Animal Life, by Snyder. Three lectures and one laboratory period. One-half of second and third terms. Junior.

7. **Research Work.**—Students specializing in agronomy will be allowed the privilege of conducting some research work under the direction of the Professor. Considerable latitude will be allowed in the selection of the work, in order that it may be made to best serve the special needs of the student. Full course. Three hours. Senior.

COTTON INDUSTRY.

R. J. H. DeLOACH, Adjunct Professor.

1. **Laboratory Course in Combing and Mounting.**—To meet successfully the demands of the cotton markets, growers must know the essentials of a good variety of cotton, and this course is offered to enable students to comb and mount samples of each variety for comparison. Offered to special students. One lecture and two laboratory periods of one hour each, per week. First term. Required of all men who elect Cotton Industry.

2. **Cotton Grading.**—In this course will be given the essentials of cotton grading together with a study of the "standard grades" of American uplands, and Sea Island cottons. Score cards will be used in this course, and students marked largely by their work in actual grading. Offered to special students. Three hours per week. Second Term. No text-book required. Note books required.

3. **Cotton Industries.**—General course in cotton industries including the above courses, together with a course in the marketing and handling of cotton from the commercial standpoint. A study of varieties and variety tests, and selection for improving cotton. Offered to special students who wish to take a short course in the department of cotton industry. Three hours per week during entire year. Bulletins and other publications referred to during course.

4. **The Cotton Fiber.**—A scientific course in the structure of the cotton fiber, with a classification of fibers and their uses. Consideration will be given to the botanical relations of cotton fiber, the effect of ginning and baling, and final uses of the fiber for manufactured products. General reference will be made to the chemistry of the fiber, and the processes of dyeing. Text: F. H. Bowman's Structure of the Cotton Fiber. Three periods, first and second terms. Two lectures and one laboratory period. Juniors who elect cotton industry and general Senior course.

5. **Plant Breeding.**—A general course in the principles of plant breeding, with special references to technique in cotton breeding. The course will consist partly of lectures and partly of field experiments. Text: Bailey's Plant Breeding, supplemented

by DeVries Plant Breeding, and numerous references. Three hours, third term. Juniors. Seniors general course.

6. **Experiment Station Work.**—Designed to give a review of experiment stations, their history and influence, a study of the agricultural societies in the United States, and their relation to the history of experiment stations. Some consideration will be given to the land grant colleges. Students who take this course will be required to do a considerable amount of seminary work. Three hours, first term. Seniors.

7. **Research.**—Advanced courses will be offered in the principles of plant breeding, in which opportunity will be given for the study of the cytology of cotton, and the cytological aspects of cotton breeding. Three periods per week. One lecture and two laboratory periods, during entire year. Senior students in Cotton Industry.

For One Year Students.

A general course made up from courses 1 and 2, Cotton Industry.

ANIMAL HUSBANDRY.

ANDREW M. SOULE, Professor.
MILTON P. JARNAGIN, Professor.

1. **Principles of Dairying.**—This course includes the theoretical and applied side of dairy and creamery practice. A detailed study will be made of the theory of milk secretion, formation, and production; separation of cream by the shallow and deep setting systems, and by the use of the centrifugal machine. The natural fermentations occurring in milk, their benefit and control; the manufacturing of butter; the testing of milk and its products for butter fat will be considered in their proper order. The use of the various acid tests, and of the lactometer for detecting adulterations in milk; the preparation of certified milk, and the marketing of milk and its by-products constitute a part of the work in this course. Two 1-hour recitations and two 2-hour laboratory periods each week. Second term, Freshman year.

2. **Horses, Mules and Beef Cattle.**—In this course the origin, history and development of the various breeds of horses and beef cattle will be studied. The adaptation of the various breeds and types to different conditions of soil, climate and environment; a comparison of draft and light horses will be made, and especial emphasis laid on the adaptation of the different types of horses and mules to the various kinds of work. Two 1-hour recitations each week. First term, Sophomore year.

3. **Dairy Cattle.**—In this course the origin and utility of the several breeds of dairy and dual-purpose cattle will be studied. Their adaptation for the production of milk, butter, cheese, or for both milk and beef making will be carefully considered. A comparison of the profits to be derived from the various breeds under different conditions of farming will form an important part of the instruction provided. Two 1-hour recitations each week. Second term, Sophomore year.

4. **Sheep and Swine.**—This course embraces a study of the history and development of the various breeds of lard and bacon hogs, both of English and American origin. Especial attention will be given in this course to types of hogs suited to grazing. The history of the various breeds of sheep will be taken up, and comparison of the several classes made. Special emphasis will be laid on growing and marketing hothouse lambs and on classifying wool. Two 1-hour recitations. Third term, Sophomore year.

5. **Stock Judging.**—The students will receive training in the use of the score card for the various classes of live stock, and will study the standards of excellence as established by the several Breeders' Associations. In addition to this they will be given practical work in comparative judging and show ring placing of the various breeding and market classes of horses, dairy and beef cattle; bacon and lard hogs; fine wool, medium wool, and long wool sheep. Two 2-hour laboratory periods each week. First, second and third term, Sophomore year.

6. **Principles of Breeding.**—The principles of breeding include a consideration of selection, heredity, atavism, normal variation and fecundity. The methods of breeding studied include in-breeding, line-breeding, cross-breeding, and a review of the methods by which the best types of animal have been developed. Two 1-hour recitations. Third term, Junior year.

7. **Practice in Breeding.**—In this course the students will be given instruction in the tabulation of pedigrees; filling out of applications for registry; the making of transfers of recorded animals as required by the different breeders' associations; also a study of the rules governing eligibility for registry. Students will be familiarized with the fashionable and popular blood lines in the various breeds. Two 2-hour laboratory periods. Third term, Junior year.

8. **Animal Nutrition.**—In this course a study of the gross anatomy and physiology of the digestive system is included. The theoretical and practical side of compounding balanced rations for maintenance, milk and butter production, fattening and

growth are fully explained. Two recitations per week. First and second terms, Senior year.

9. **Advanced Work in Animal Nutrition.**—This course is provided for advanced students in Animal Husbandry. The results of feeding tests at the various Experiment Stations and Agricultural Colleges in this and other countries will be reviewed. Three 1-hour recitations per week. First term, Senior year.

10. **Feeding Problems.**—Qualified students will be allowed to assist in conducting feeding tests, keeping records and summarizing results of experimental feeding conducted by the Department of Animal Husbandry. They will also be expected to make analyses of the various feeding stuffs used and to determine the fertilizing value of the excreta obtained from various classes of farm animals. Three 1-hour recitations per week. Second term.

11. **Economics of Animal Production.**—In this course the various types of breeds of live stock will be considered in their relation to the utilization of various farm crops; relation to the productiveness of the soil; and the creation of wealth in general. Three 1-hour recitations per week. Third term.

12. **Research Work in Animal Husbandry.**—Qualified students will be allowed to carry on original investigations in Animal Husbandry under the approval and direction of the Professor in charge of the department. Three hours. Senior.

HORTICULTURE.

T. H. McHATTON, Adjunct Professor.

1. **Elements of Horticulture: Fruit Growing.**—A general study of location, site, frost, planting, varieties, orchard tillage and management. Book: Principles of Horticulture, Bailey; to be supplemented by lectures. Three lectures per week. Required of Freshmen in Fall Term.

2. **Pruning and Propagation.**—A course in grafting, budding and other methods of propagation; also a study of the principles of pruning with its practice and effect. A few periods will be devoted to a study of varieties both for the orchard and truck garden. Book: The Nursery Book, Bailey, to be supplemented by lectures. Laboratory course of three periods per week. Required of Freshmen in Winter Term.

3. **Elements of Horticulture: Truck Gardening.**—A general study of the main truck crops as to planting, tillage and handling, with the addition of a study of hot-beds and their management. Book: The Principles of Truck Gardening, Bailey; to be supple-

mented by lectures. Three lectures per week. Required of Freshmen in Spring term.

4. **Fruit Growing**; Small Fruits; Trucking. A course following much the order of courses 1 and 2, but going more deeply into a discussion of the subjects. A map of an orchard, stating exposure, varieties used, etc., will be expected of the student at the end of the term. Books of reference, Principles of Fruit Growing, Bailey; Principles of Vegetable Gardening, Bailey; Bush Fruits, Card. Three lectures per week. Required of Juniors electing Horticulture in Fall term.

5. **Pomology and Garden Seeds.**—A course in the testing of seeds and a study of the several varieties of fruit with their pomological classification. Book: Systematic Pomology, Waugh, to be supplemented by lectures. A laboratory course of three periods per week, to be carried with course 4. Required of Juniors electing Horticulture in the Fall term.

6. **Economic Entomology and Plant Diseases.**—A study of the insects and diseases of economic importance, especial attention being given to their life histories and the injuries caused by them. Reference books: Insects Injurious to Fruits, Saunders; Insects Injurious to Vegetables, Chittenden; Diseases of Plants, Tubeuf & Smith; Massee on Plant Diseases. Three lectures per week. Required of Juniors electing Horticulture in Winter term.

7. **Spraying.**—A laboratory course to be given with Horticulture 6. Practice given in the making and application of the different spray mixtures, with a study of their history and chemistry. Reference book, The Spraying of Plants, Lodeman. Three laboratory periods per week. Required of Juniors electing Horticulture in the Winter term.

8. **Floriculture and Greenhouse Management.**—A study of the various flower crops, also the constructing, heating and managing of a greenhouse. A ground plan, end elevation, bill of materials, and type of heating plant used will be required of the student at the end of the course. Reference books: Greenhouse Management, Taft; and Greenhouse Construction, Taft; The Forcing Book, Bailey, and Practical Floriculture, Peter Henderson. Three lectures and three laboratory periods per week. Required of Juniors electing Horticulture in the Spring term.

9. **Landscape Gardening.** A study of the various schools of Landscape Architecture and also of the plants used in producing the varied effects. A problem in Landscape Gardening will be given to each student, and a drawing showing his solution required. Book: Lanscape Gardening as Applied to Home Decoration, May-

nard. Three lectures and three laboratory periods per week. Required of Seniors electing Horticulture in the Fall term.

10. **Literature of Horticulture.**—A course in the general history of Horticulture, with a study of the different reference books and papers. Three lectures per week. Required of Seniors electing Horticulture in the Winter term.

11. **Thesis.**—The student is here asked to select some problem in one of the divisions of Horticulture, and will be allowed to find the solution in his own way. Time is given for consulting with the instructor so that his help may be obtained from time to time. At the end of the course a thesis stating the problem, the methods followed, and the results obtained will be required of the student. Three lecture hours and three laboratory periods per week. Required of Seniors electing Horticulture in the Spring term.

FARM MECHANICS.

LEROY C. HART, Instructor.

1. **Wood Work.**—In this course will be considered the use and care of tools, planning work, making joints, and framing that will be helpful in construction work necessary under farm conditions. Required of Freshmen. First term. Two laboratory periods per week.

2. **Forge Work.**—This work is designed to make a man competent to repair any ordinary breakage of farm machinery. Some practice work will be given in welding and shaping iron. Additional work in the handling of steel, especially in the making and tempering of hand tools will be given. Freshman year. First term. Two laboratory periods per week.

3. **Drawing.**—Sufficient time will be devoted to free-hand drawing to enable the student to execute readily the necessary drawings in the various laboratory courses. Mechanical drawing will then be taken up so that the student may become familiar with the use of the instruments, and be able to execute rapidly and neatly any drawing of this kind that will be required. Freshman year. First term. Two laboratory periods per week.

4. **Farm Machinery.**—A study will be made of the construction and use of the various farm machines, such as planting, cultivating and harvesting machinery. Considerable time will be given to the practical handling of power machines, including electric motors, and gasoline and steam engines. Freshman year. Third term. Two laboratory periods each week.

5. **Farm Buildings and Fencing.**—This will include a study of the strength and adaptability of various material for building

and fence construction. The principles of construction will be emphasized particularly, as well as the planning of the various farm buildings. Special attention will be given to farm convenience and sanitation. Considerable time will be spent in studying problems of lighting, heating, water supply, and sewerage for the farm home. Junior year. Second term. Two lectures and one laboratory period.

6. **Concrete Construction.**—A study will be made of the principles of concrete construction and their application to farm conditions. The various uses to which concrete has been put in late years will be pointed out. Special attention will be given to its use for residence and barns. The construction of fence posts from concrete will be taken up. Optional for Seniors. Two lectures and one laboratory period.

7. **Road Building.**—A study will be made of the various machinery used in road construction. Practice work will be given in locating roads on the most desirable grades with special attention to drainage. Considerable time will be devoted to road material, and tests of the various kinds of rock for this purpose will be made. Optional for Seniors. Three lectures and one laboratory period each week.

Note.—6 and 7 will constitute half a year's work.

FORESTRY.

ALFRED AKERMAN, Professor.

Work of the School of Forestry.

The school was created in 1905; and work was begun with the academic year 1906-1907. Several lines of work have been undertaken: (1) Instruction in Forest Economics, to bring out the importance of our forests to the state and to the nation; (2) Elementary instruction in forestry, to familiarize the agricultural students with the management of farm woodlots and the execution of forest working plans; (3) Instruction in professional forestry, for those who intend to go into the lumber business, or to follow forest engineering as a profession; (4)Popular education in forestry throughout the State; (5) Coöperation with the owners of woodlands.

The work along the first line is embodied in course 1; along the second line in courses 2 and 3; along the third line in courses 4, 5, 6, 7, 8, and 9; along the fourth line in publications and in lectures before schools, farmers' institutes, lumbermens' associations, and other interested organizations; along the fifth line in the coöperative agreement which the College of Agriculture makes with woodland owners.

Description of Courses.

1. **Economics of Forestry.**—This course is designed to bring out the importance of the forest to the state and nation. It deals with the direct and indirect utilities of the forest, that is, the production of lumber, naval stores, tan-bark, and fuel; the regulation of stream-flow; and influence on climatic conditions. Six lectures, third term. *Required of Seniors in Economics.*

2. **Farm Forestry.**—A study of forestry as applied to farm woodlands. The course is designed to give a working knowledge of how to secure a stand of timber, how to thin, protect, and harvest the forest crop. Text: Akerman's "Farm Forestry." Two 1-hour recitations and one 2-hour practice period, third term. *Required of those taking the one-year course in Agriculture.*

3. **Farm Forestry, Longer Course.**—Similar to Course 2, but adapted to more advanced students. One 1-hour lecture and two 2-hour practice periods, second half year. *Optional mith Seniors in Agriculture.*

4. **Dendrology.**—This course comprises a botanic and economic study of forest trees. Identification of species in the woods in summer and winter habit is given special attention. Instruction is given by lectures, laboratory work, and excursions. Reference work: Sargent's "Manual of the trees of North America." Begins in Junior Camp, 6 hours; continued during the Junior year at Athens, 3 hours; completed in the Senior Camp, 6 hours. *Required of candidates for degree in Forestry.*

5. **Silviculture.**—A study of forest stands from their founding to maturity, including artificial and natural reproduction, tending the stand, and silvical notes on the important species. Instruction by lecture, excursion, and practice. Junior Camp, 6 hours; Senior Camp, 6 hours; completed in Senior year at Athens, 3 hours. *Required of candidates for degree.*

6. **Forest Protection.**—A study of the injury to the forest from trespass, fire, storms, insects, fungi, and grazing, and of protective measures. Instruction by lecture, excursion, and practice. Junior Camp, 2 hours; Senior Camp, 2 hours; completed at Athens, 3 hours first term. *Required of candidates for degree.*

7. **Forest Mensuration.**—Computation of contents of logs, standing trees and forest stands; studies in diameter, height, and volume increment; the use of instruments of mensuration; ocular estimation of timber; log scales and their use. Instruction by

text, supplemented by lectures and practice in the woods. Text: Graves' "Forest Mensuration." Junior Camp, 2 hours; Senior Camp, 2 hours; completed at Athens, 3 hours, first half year. *Required of candidates for degree.*

8. **Forest Management.**—Forest valuation, financial returns from forest property; principles of forest working plans; construction of a forest working plan for a given tract. Instruction by lecture, with practice in the woods. Senior year, 3 hours, first term; 6 hours second; 9 hours third. *Required of candidates for degree.*

9. **Lumbering and Utilization.**—A study of the lumber industry, and the uses of wood (not included in Civil Engineering 3); the methods employed by lumbermen, and their improvement: felling, transportation, and manufacture. An essay on some branch of the lumber industry is required. Instruction by lectures, supplemented by reading and investigation. Junior Camp, 2 hours; Senior Camp, 2 hours; completed at Athens, 3 hours first and second terms. *Required of candidates for degree.*

10. **Wooden Building Materials.**—A review of the principal timber trees; their distribution, properties, and uses. Methods and results of seasoning and injection with preservatives. Ten lectures, third term. *Required of Seniors in Civil Engineering.*

The Summer Camps.

Beginning this year two summer terms will be added to the professional courses, as heretofore offered, one between the Sophomore and Junior years and one between the Junior and Senior years, each to begin the first Monday after June 10th, and to end the first Saturday after August 20th. The summer terms will be spent in camp in the lumber woods, alternately in the mountains of North Georgia and in the longleaf pine belt of South Georgia or Florida. During the summer of 1909 the camp will be in the mountains. The object of the camp is two-fold: first, to acquaint the students with camp life, an essential in a forester's training; second, to afford an opportunity of studying the dendrology, lumbering, and utilization of the mountains, the Coastal Plain, and of the Piedmont region at Athens. These changes will involve the sacrifice of a part of the summer vacaotin, but the change from class-room to life in the woods will accomplish the real object of a vacation—a change.

A deposit of $60 must be made with the Treasurer of the University on or before June 1st, to cover camp expenses, including food. At the end of the summer the expenses will be prorated and any unexpended balance will be returned.

School teachers or others who may be interested in Forestry in a general way or in Nature Study, are cordially invited to join these camping parties. They must pursue the same studies and be subject to the same discipline as the regular students.

Inquiries relative to the summer camps should be addressed to the Professor of Forestry, Athens, Ga.

Prizes.

Through the kindness of an alumnus who withholds his name, prizes of $10.00 each are offered in connection with courses 1, 3, and 10.

VALUE OF THE FOREST TO THE STATE AND NATION.

The position of the forest in the economics of the country is fundamental. It is the source of supply of many kinds of raw material; and indirectly, it performs a great service by its influence on water-flow. It also furnishes a means for the investment of capital and the employment of labor. The annual output of forest products in the United States is estimated at $1,020,000,000; and Georgia, as a lumber and naval stores producing state, is vitally interested in the continuation of her share of the output. There are probably 720,000 wage earners employed in cutting and manufacturing the forest crop: the steady employment of these laborers means a great deal to them and to those with whom they spend their wages. The movement of the center of the lumber industry from the New England States to the Lake States, and from the Lake States to the Southern States and the Pacific coast, means that we are cutting our forest crops faster than they are growing, and we must take active measures to perpetuate our forests, and, through them, to maintain our forest industries and other industries which are dependent on them.

Our streams are becoming liable to overflow; and the situation of a forest cover about their sources means the lessening of loss of life and property from floods.

When these considerations are borne in mind, the appropriateness of the course in Forest Economics is apparent. This course deals in detail with problems that are of great importance to the State and Nation. The condition of our forests is serious and deserves the serious attention of every student of economics.

FORESTRY AND THE FARM.

The average Georgia farm holding consists in part of cleared land and in part of woodland. The woodland part may, with proper management, be made profitable. The application of a few simple rules will often turn the woodlot into a source of steady revenue. For this reason the University offers two courses in Farm Forestry, one for the short winter course men in Agriculture, and one for the Seniors in the degree course in Agriculture.

THE PROFESSION OF FORESTRY.

This is a comparatively new profession. Prior to 1876 forestry was unknown in this country; and there was no demand for trained men. But the progress of forestry has been rapid in recent years. The United States, some of the states, and a number of lumber companies and individuals have begun to practice forestry on their holdings. This has created a demand for professional foresters.

At present the United States Forest Service is the largest employer of trained foresters. The candidates for this service usually spend from one to two years in special training at a forest school and then take the Civil Service examination, which places them among those eligible to appointment as Forest Assistants, at salaries ranging from $720.00 to $1,800.00 per annum. Promotion depends on ability and opportunity for distinguishing service. The highest position in the service carries a salary of $4,000.00.

Positions with the states, lumber companies, individual owners of timber lands, and in colleges as lecturers, are rapidly increasing in number, and are often considered more desirable than the United States service.

Some foresters prefer to work independently as consulting forest engineers.

The profession does not offer great rewards in the form of money, but it offers great opportunities for usefulness, and those who train for it rarely regret their choice. It is indeed hard to find men more devoted than foresters to their vocations.

The work is similar to that of civil engineering. It consists in laying out fire lines; the building of logging roads; inspecting logging operations; superintending seeding and planting operations; management of timber sales; estimating standing timber; and the preparation of forest maps and working plans. In certain lines of work there is considerable scientific research.

Anyone who has the qualities of mind that would insure success as a civil engineer, will succeed as a forester.

No one ought to undertake to become a professional forester unless he has good health. The work is often fatiguing and must often be done in foul weather and under conditions that make exposure unavoidable. On the other hand, it often requires weeks and months of the most exacting indoor work at the desk or drafting table. The popular idea that forestry is an occupation for sick people is a mistake. No one should take up forestry in a professional way unless he is rugged enough to stand the life of a civil engineer or a soldier.

FORESTRY AND THE LUMBER BUSINESS.

Speaking broadly, the only difference between lumbering and forestry is that the forester looks a little further ahead than the lumberman. The lumberman harvests the timber crop and moves on. The forester harvests the timber crop, but secures a young stand, to which he returns for a second crop. Lumbermen are finding it more and more worth their while to plan for a second crop. This is true more especially of those who have made heavy investments in mills and who wish to insure a continued supply of logs for their mills. Anyone who contemplates going into the lumber business would find a knowledge of foresty of great value. The courses at the University have been planned with the needs of the prospective lumberman in view.

POPULAR EDUCATION IN FORESTRY.

The condition of our forest constitutes a great problem. It is a problem that cannot be solved in the study or the laboratory. The people own most of the woodlands; and upon their attitude towards forestry, depends, in large measure, the solution of the problem. They cannot come to the University; the University must therefore go to them. The University will furnish a lecturer on forestry to any school, farmers' institute, or other gathering where forestry may be discussed.

"Southern Woodlands," a magazine devoted to forestry, is edited by the Professor of Forestry in the College of Agriculture. It is published by the Georgia Forest Association. In this way the Association and the University share in spreading a knowledge of forestry. Sample copies of the magazine may be had by applying either to the Association or the College.

CO-OPERATION WITH LUMBERMEN

The College furnishes an expert to examine woodlands and prepare suggestions as to their management. Those who desire advice in the management of woodlands or in planting waste lands should make application on blanks which are sent on request.

MATHEMATICS.

C. M. SNELLING, Professor.
R. P. STEPHENS, Adjunct Professor.
TOMLINSON FORT, Instructor.

1. **Algebra.**—*Required of Freshmen.* The work of the Freshman Class will include Graphical Representation, Simultaneous Quadratics in two variables, Mathematical Induction, Binomial Theorem, Arithmetical and Geometrical Progression, Permutations and Combinations, Complex Numbers, The Theory of Equations and Determinants, as presented in Hawkes' Advanced Algebra. Three hours a week. Text-book: Hawkes' Advanced Algebra.

2. Solid Geometry. Three hours per week until Feb. 1st. Books V to IX inclusive. *Required of Sophomores.* Text-book: Wentworth's Solid Geometry (Revised Edition).

3. Plane Trigonometry. Three hours per week after Feb. 1st. Definition of Trigonometric Functions, The Right Triangle, Goniometry, the Oblique Triangle and Applications. *Required of Sophomores.*

4. **Algebra and Spherical Trigonometry.**—The first part of this course will be from mimeographed notes on Convergency and Summation of Series, Binomial Theorem for all exponents, Undetermined Coefficients, Logarithms. The second part will include the usual subjects in Spherical Trigonometry. (Sophomore Class). Three hours per week the first term. Texts: Murray's Spherical Trigonometry, Murray's Tables.

5. **Analytic Geometry** (Shorter Course). Coördinates, Straight Line, Circle, Parabola, Ellipse, Hyperbola and General Equation of the Second Degree. (Sophomore Class). Three hours per week for the first half year. Text: Nichols's Analytic Geometry.

7. **Calculus** (Introductory). Elementary principles of Differentiation and Integration with applications. (Sophomore Class). Three hours per week for the second half year. Text: Nichols's Differential and Integral Calculus.

CIVIL ENGINEERING.

C. M. STRAHAN, Professor.
E. L. GRIGGS, Adjunct Professor.

1. **Elementary Surveying.**—An introductory course including the use, care and adjustment of instruments, and the methods of land surveying by chain alone, by compass, and by transit; the methods of platting and computing areas; the variation of the

magnetic needle; problems in parting off and dividing up land, and leveling; plane table and stadia surveying, and the use of the solar transit. Three hours per week. Junior. General elective. Text: Barton's Surveying.

2. **Railroad Engineering.**—Methods of reconnoissance, preliminary and location surveys; cross-sectioning, computations and estimates, and the various other problems involved in the complete Engineering of Railways. Five hours per week, first half year. *Required of Juniors in Civil and Electrical Engineering courses.* Text: Searles' Field Engineering. Lectures.

3. **Materials and Construction.**—A course of lectures upon the various materials of engineering, their occurrence, preparation, properties, use and testing; building construction, and the superintendence of building operations; and highway construction. Five hours per week, second half year. *Required of Juniors in Civil and Electrical Engineering courses.* Lectures.

6. **Linear Drawing and Projections.**—The first part of this course includes the construction of simple geometrical figures, designed to teach the use of instruments and habits of neatness and precision. The work in projection follows. The course is illustrated by models, and written examinations are held at intervals. Practice in lettering is given throughout the course. With this course is given also two hours per week of free-hand drawing. Six hours per week, first term. Freshmen. Text: "Elements of Drawing," Strahan and Griggs.

9. **Topographical Drawing.**—Topographical map of a practice survey on an elaborate scale. Four hours per week, first half year. *Required of Juniors in Civil Engineering course.*

PHYSICS.

L. L. HENDREN, Professor.
H. K. NICHOLSON, Assistant.
J. W. NAPIER, Assistant.

1. **Elementary Physics.** Text-book, Millikan and Gales's First Principles of Physics. Three hours per week. *Required of Sophomores.*

2. **General Physics.** A course embracing Mechanics, Sound, Heat, Electricity, and Magnetism. Laboratory work will be required. Three hours per week. *Optional for Juniors and Seniors.*

3. **Advanced Physics.** The first part of this course will be a continuation of course 2, and will take up the study of Light. The greater part of the course, however, will be devoted to a study of the Electron Theory of Matter as applied to the expla-

nation of fundamental physical phenomena. Some laboratory work will be required. Three hours per week. *Optional for Seniors who have taken course 2.*

4. **Descriptive Astronomy.**—Text-book, Moulton's Introduction to Astronomy. Three hours per week, first half year. *Required of Seniors in the Electrical Engineering, Civil Engineering, and Agricultural courses. Optional for all others.*

5. **General Physics.**—A course of college grade covering the whole subject. Text-book, Crew's General Physics. A knowledge of Plane Trigonometry is a necessary entrance requirement for this course. Three hours per week recitation, and two hours per week laboratory work. *Required of all Sophomores in the B. S. courses.*

6. **General Physics.**—In this course some of the more fundamental principles in Physics will be taken up in detail and the recitation and class work will be grouped around the discussion of a number of laboratory experiments. Text-books: Millikan's Mechanics, Molecular Physics and Heat; Millikan and Mill's Electricity, Sound and Light. Three hours per week recitation and two hours per week laboratory. *Required of Juniors in the Electrical and Civil Engineering courses; optional for all others.*

Note.—A laboratory fee of $3.00 to cover breakage, etc., will be charged for course 2.

CHEMISTRY.

H. C. WHITE, Professor.
H. V. BLACK, Adjunct Professor.

The following courses are offered for agricultural students:

1. **Elementary Chemistry.**—Three hours per week of lectures and recitations and two laboratory periods, for three terms. Text: Remsen; Briefer Course.

2. **Inorganic Chemistry; College Course.**—Three hours per week of lectures and recitations and two laboratory periods, for three terms. Texts: Remsen; Holleman-Cooper; Text Book of Inorganic Chemistry.

4. **Industrial (including Agricultural) Chemistry.**—Three hours per week of lectures and recitations for three terms. Texts: Professor's Notes; Thorp; Industrial Chemistry.

BIOLOGY.

J. P. CAMPBELL, Professor.

The following courses are offered for the ensuing year:

1. **Animal Physiology.** The object of this course is in part to give the student such knowledge of his own body and its work-

ings as every well educated man should have, and also to illustrate the methods of science. To these ends, Anatomy and Histology are considered as far as necessary but special stress is laid upon the functional activities of the tissues and organs, and the conditions necessary for their healthy activities. Text: Huxley's Lessons in Elementary Physiology. Two hours per week. *Required of Sophomores in all Agricultural courses.*

2. **General Invertebrate Zoölogy.** This course is based upon the laboratory study of a selected series of types representing most of the main divisions of the animal kingdom. Arthropods are studied in the first term, Mollusca, Annulata, and the smaller phyla in the second, and Echinoderms, Coelentera and Protozoa in the third. The morphological point of view predominates, but attention is also given to physiology, ecology, embryology, and classification, and in addition, each group is made to illustrate some important theoretical question to which it is especially adapted. Three hours weekly with laboratory work additional. *Required of Juniors taking Animal Husbandry elective.*

3. **General Vertebrate Zoölogy.** This is a continuation of course 2, and the same general methods prevail. The Protochordata are first taken up with a discussion of the theoretical questions that they involve, after which the various vertebrate classes are considered, attention being given to structure, ecology, classification, economic problems, etc. Three hours weekly during the first term with laboratory work additional. *Optional to Seniors taking Animal Husbandry elective.*

5. **Animal Physiology.** This course is planned for students who have a good knowledge of elementary Physiology equal in scope to that given by course 1, and who have in addition a good working knowledge of Physics and Organic Chemistry. Special topics are taken up for fairly exhaustive treatment, and the effort is made to bring the student into touch with the latest developments of the subject. The laboratory work consists in part of Physiological Chemistry, and in part of experimental Physiology. Three hours weekly with laboratory work additional during second and third terms. *Optional to Seniors taking Animal Husbandry elective.*

BOTANY.

J. M. READE, Professor.

The following courses have been arranged to meet the needs of students in agriculture. Course 1 is for beginners and requires no preparatory work in science. Courses 1 and 2 are foundation work and preparatory to the various applications of the subject in horticulture, agronomy, soils, and plant breeding. Course 1 is required of Sophomores. Course 2 is required of Juniors in groups 1, 2, 4, and optional in 5. Courses 3, 4, 5, and 6 are optional for Seniors.

1. **Elementary Botany.**—This course aims to initiate the student in scientific methods of work and to give him an acquaintance with the main facts in the structure and the vital processes of common plants. The purpose of the course is to lay a correct foundation for such applied studies as the artificial propagation of plants, soil renovation, and various other horticultural and agricultural operations. One lecture and two labora-

2. **General Plant Morphology.**—A study of selected types representing the great natural groups. This course gives a gen-
tory periods weekly throughout the year.
eral survey of the plant kingdom and discussion of the special biologic and economic problems therein illustrated. Among the number are such topics as life histories, living conditions, diseases, public health, evolution of the flower, adaptation, variation, heredity, and the production of improved varieties. Two lectures and two laboratory periods weekly throughout the year.

3. **Mycology.**—A general account of the morphology and biology of the Fungi. Special attention is given to kinds of importance to Agriculture and Manufactures as associated with plant diseases, soil fertility, the decay of timbers; and to kinds edible and poisonous. This course is of especial value to students specializing in horticulture, agronomy, and forestry and to teachers. One lecture and two laboratory periods weekly during the first half year.

4. **Plant Diseases.**—An information course planned to meet the needs of those requiring a practical knowledge of the subject. The dieases of the more important crops are taken up and discussed as to their cause, nature, methods of control, and literature. One lecture and two laboratory periods weekly during the second half year. Courses 3 and 4 make a consistent year's work.

5. **Plant Physiology.**—A series of laboratory experiments dealing with the principal phases of plant activity, absorption, transpiration, photosynthesis, respiration, growth, and irritability, together with assigned reading and conferences. Two laboratory periods weekly during the second half year.

6. **Plant Histology.**—This course deals with cell structure, cell problems, and the organization of cells into tissues and organs. At the same time it gives valuable training in microscopical

methods. One lecture and two laboratory periods weekly throughout the year.

Courses are optional for Seniors.

For further opportunity in pure or applied botany consult with the professor.

RHETORIC AND ENGLISH LITERATURE.

R. E. PARK, Jr., Professor.
S. V. SANFORD, Junior Professor.
S. M. SALYER, Instructor.

2. **Composition and Rhetoric.**—Detailed study and practice in construction and kinds of composition. This course will involve continual practice in writing and some work in rhetorical analysis. Lectures, themes, daily exercises. The course is based on Scott and Denny's "Paragraph Writing," and Genung's "Practical Rhetoric." *Required of Freshmen.* Full course, three hours.

3. **Outline of English Literature,** and masterpieces of selected authors studied with reference to (1) elements of literature, (2) species of literature, (3) historical development. The object of this course will be to give the student a general view of the history and development of English Literature, with more detailed knowledge of certain periods. Throughout the course much attention will be devoted to the writing of essays as a means of training the student to appreciate and express his appreciation of the literature studied. *Required of Sophomores.* Full course, three hours.

4. **Criticism.**—The principles of literary criticism and the practical application of these principles to the various forms of literature. *Optional for Juniors.* Three hours a week, first term.

HISTORY AND POLITICAL SCIENCE.

J. H. T. McPHERSON, Professor.
W. O. PAYNE, Adjunct Professor.

2. **History of Europe.**—An elementary study of European history from the treaty of Verdun to the nineteenth century. Three hours a week through the year. Text: Robinson's History of Western Europe. *Required of Sophomores.*

4. **Political and Constitutional History of England.**—Especial attention is paid to the development of parliament, the cabinet, and the various phases of local government—township, parish, manor, hundred and county—with the object of laying a thorough foundation for the subsequent study of American institutions.

The contemporary progress of European events is kept constantly in review. Three hours a week through the year. Text: Terry's History of England. *Sophomores.*

14. **Economics.**—A general introduction to the principles of Political Economy. Three hours a week, first half year. *Seniors.*

15. **Economic History of the United States.**—The principles acquired in course 14 are here applied in a systematic review of the economic and financial experience of the country, and in a careful study of the leading problems of the day. Three hours a week, second half year. *Seniors.*

GERMAN.

JOHN MORRIS, Professor.
M. D. DuBOSE, Tutor.

1. **German 1** is a course for beginners who are conditioned in German and wish to substitute both German and French for Greek in the A. B. degree. For 1908-09 this course comprised an elementary grammar and reader, with daily written and oral exercises in parsing and in translation from English into German. Three hours per week. *Prof. Morris and Mr. DuBose.*

2. **German 2** continues the work of German 1, and completes the requirement for entrance given on page 26. The course consists of translation of simple texts, with completion of grammar, accompanied by constant parsing, and exercises in both speaking and writing German. Three hours per week. *Prof. Morris and Mr. DuBose.*

3. **German 3** consists of extensive translation of intermediate texts, with written and oral exercises based upon them. Three hours per week. *Optional for Freshmen. Prof. Morris and Mr. DuBose.*

LATIN.

W. D. HOOPER, Professor.
R. L. McWHORTER, Instructor.

1. **Livy.**—In addition to the reading of the twenty-first and twenty second books, in Bechtel's Selections from Livy, the syntax is studied formally, and exercises are given in translation from English into Latin, to illustrate the usages. There is also constant practice in reading at sight. Three hours per week. *Required of Freshmen. Prof. Hooper and Mr. McWhorter.*

2. **Horace**: selected Odes: **Cicero,** de Officiis, Book I. Lectures on metres are given in connection with the reading of the Odes,

and practice in metrical reading is constant. There is also practice in reading at sight, and written exercises in translation from Latin into English are required weekly. Three hours per week. *Required of Sophomres. Prof. Hooper and Mr. McWhorter.*

ROMANCE LANGUAGES.

J. LUSTRAT, Professor.

French.

1. **French 1** is a course for beginners who are conditioned in French and wish to substitute both French and German for Greek. The course consists of careful drill in pronunciation, the rudiments of grammar, the study of regular and irregular verbs, the inflection and use of personal pronouns, the rudiments of syntax, dictation, easy exercises of translation from English into French, conversation, and the reading of about 275 duodecimo pages of easy prose. Three hours per week.

2. **French 2** is the continuation of course 1, for students who are conditioned in French and wish to substitute both French and German for Greek. It will comprise the reading of about 400 pages of easy modern prose, constant practice in translating into French easy English prose, dictation, short drill in grammar and syntax, full study of all irregular verbs, and conversation. Three hours per week.

3. Study of grammatical difficulties, idioms, and provincialisms. Compositions and essays in French. Reading from 600 to 1,000 pages of prose and poetry. Continuation of translation from English into French. Conversational French. Three hours per week. *Optional for Freshmen.*

EDUCATION.

T. J. WOOFTER, Professor.

1. **History of Education.** The educational doctrines and practices of the great peoples of the world with special study of the modern period, (1) the development of modern educational ideals and systems, and (2) the development of secondary schools. *Prof. Woofter.*

2. **Psychology of Education.** A course dealing with such topics as education as a science, perception, apperception, memory, thought, feeling and emotion, the aesthetic, the altruistic, the field of will, instinct, imitation, suggestion, interest, effort, moral and religious education. A study of the different epochs of life to determine the educational aims, material, and methods for

each, with special emphasis on the psychology of adolescence. *Prof. Woofter.*

3. **Secondary School Organization and Management.** The place and function of the high school, with consideration of conditions existing in Gorgia and the South; problems of secondary education; desired lines of progress; courses of study, discipline, and general management. Fall term. *Prof. Stewart.*

4. **General Principles of Teaching.** The teaching process; the recitation considered in its unity and parts; purpose, essentials, preparation, assignment of lessons, home study, etc.; the art of questioning; class-room management. Winter term. *Prof. Woofter.*

5. **Pedagogy of Special Subjects.** This course will deal with the teaching of subjects in the high school. Certain subjects will be arranged so that courses in two or more may be taken. The educational value, course of study, and teaching of the following: Agriculture and Nature Study; English; History and Geography; Mathematics; Natural Science; Foreign Language.

6. **Seminary in School Administration and Supervision.** For those preparing to become superintendents and supervisors as well as teachers of special subjects. The whole field of education, elementary, secondary, higher, will be considered. *Prof. Woofter.*

GEOLOGY.

Vacant.*

1. **General Geology.**—Three hours per week, second half-year. The course of instruction is at first a general one, embracing the study of the distinguishing properties of minerals and common rocks, the decay of rocks and the formation of soils. Following this is a more extended course of Structural, Dynamical, and Historical Geography.

MILITARY SCIENCE AND TACTICS.

JAMES MOBLEY KIMBROUGH, Jr.

1st Lieut., 27th U. S. Infantry, Commandant.

In accordance with the provisions of the Land Grant Act, military exercises are regularly held in this college, upon which the attendance is compulsory by members of the Freshman, Sophomore and Junior Classes, and the students in the One Year Course in Agriculture, except when excused by the surgeon of the Corps of Cadets.

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*Temporarily in charge of the Professor of Chemistry.

The uniform consists of a coat of standard Charlottesville gray cloth; winter trousers of same material, with stripe one inch wide; and blue cloth cap. The uniform costs about $15.55. For spring use white duck trousers, jeans trousers and blue shirt, leggings and hat are required, costing about $4.50.

Practical instruction is given three hours each week, covering the following subjects: Infantry Drill Regulations; Field Service Regulations; Manual of Guard Duty; Firing Regulations for Small Arms; Artillery Drill Regulations, partial.

Theoretical instruction, two hours each week, for commissioned and non-commissioned officers, is given in the portions of the above subjects covered by the practical instruction, and is supplemented by lectures. *One hour each week of theoretical instruction is required of Freshmen.*

ONE-YEAR COURSE IN AGRICULTURE.

This course commences at the opening of the fall session and continues throughout the collegiate year. The purpose of this course is to provide suitable instruction to those who can only remain in college for one year. An effort has been made therefore to condense the work as much as possible, provide a correct scientific foundation, and yet make the instruction of a very practical nature. An outline of the one-year course follows. The schedule indicates the number of hours required in each subject and the amount of time devoted to class room and laboratory work. Notice that the laboratory instruction has been emphasized as this is considered the best way of demonstrating the value of applied science to the solution of the problems of the farmer.

ONE-YEAR COURSE.

First Term.

	Hours.	Lab. Periods.
English	3	..
Arithmetic	3	..
Cereals	3	..
Cereal Judging	..	1
Soils	3	..
Iron and Wood Work	..	3
Horticulture	3	1
Breeds and Breeding	3	2
Botany	3	..
	21	7

Second Term.

English	3	..
Arithmetic	3	..
Cotton and Cotton By-Products	3	1
Cotton Grading (Cotton School)	..	..
Soil Fertility	3	..
Farm Buildings	..	1
Horticulture	3	1
Dairying	1	2
Surveying	3	1
Farm Management	3	..
	22	6

Third Term.

English	3	..
Farm Accounts	3	..
Grain and Forage crops	3	1
Chemistry	3	..
Plumbing and Pipe Fitting	..	1
Horticulture	3	1
Farm Machinery	..	1
Practice Work Animal Husbandry	..	1
Feeds and Feeding	3	1
Forestry	2	1
	20	7

AGRONOMY.

Cereals and Cereal Judging.—The history, use, and cultivation of the different cereals will be studied. Especial attention will be given to seed selection as influencing the yield of farm crops. A study of the various cereals, especially corn, will be made by use of the score card. First term. Three 1-hour recitations and one laboratory period.

Farm Management.—An examination of the various business methods employed on different classes of farms is first undertaken. Special attention is given to systematizing the work and determining the effect of various rotations on the maintenance of fertility. A stereopticon is used to show how various kinds of farms should be arranged so as to conduct the business with the greatest economy.

Grasses and Forage Crops.—A study is made of the various grasses adapted to this state that can be utilized to the best advantage for pasturage and hay. The uses of the forage crops, especially the legumes, are given considerable attention. Methods of growing and preserving silage are considered at length, as this is undoubtedly the best form for preserving forage crops in the South.

Soils.—A study of the physical properties of soil is made, and the effect of good and poor mechanical conditions on crop production is demonstrated. Methods of improving the physical conditions are studied. Special attention is given to the water-holding capacity of the soil, and the best methods of conserving soil moisture. First half year. Three 1-hour recitations.

Soil Fertility.—The different fertilizing ingredients and their function in plant growth will be discussed. Methods of mixing fertilizers and determining the formulas best adapted to different soils will be studied. The effect of rotation of crops on soil fertility and the draft of the different crops on the soil will also receive attention. Second half-year. Three 1-hour recitations.

COTTON INDUSTRY.

Emphasis is laid on the importance of seed selection. A study of types of plants with special reference to their yielding capacity will be made, and the conditions affecting length, strength, uniformity, quality and quantity of fiber. Some attention will be given to combing and grading cotton, and all varieties will be studied in the seed in the laboratory. There will also be a complete set of grades of long staple and upland lint cotton in the laboratory for inspection and comparison, and students will be required to grade some cotton by the samples, after the basis of grading has been pointed out to them. Second term. Three 1-hour recitations.

ANIMAL HUSBANDRY.

Breeds and Breeding.—A practical course will be given in the study of domesticated animals, and a consideration of the fundamental laws underlying their production. Three 1-hour recitations.

Dairying.—In this course lectures will be given on the principles of modern dairying and on the manufacture of butter, cheese and other dairy prdoucts. Practice work in the operation and repair of dairy machines will be required of all students. The use of the Babcock test, and other apparatus for the detection of adulteration of milk will be fully explained. One lecture and two laboratory periods. Second term.

Feeds and Feeding.—In this course a study of the various feeding stuffs will be taken up. The balancing of rations and their adaptation for maintenance, development of bone and muscle, production of milk and butter, and for maintaining and fattening farm animals will be discussed and explained. Three 1-hour recitations and one laboratory period. Third term.

Stock Judging.—Scoring, judging and classifying the various classes of farm live stock will form an important part of this course. After the student has become proficient in the use of the score card, work will be given in comparative judging and show-ring placing. The standard of excellence as established by the several Breeders' Associations will also be given some attention. First term. Two laboratory periods.

HORTICULTURE.

Orchards—A study of orchards as to location, site, exposure, cultivation, fertilization, planting, pruning, spraying, thinning, harvesting, and marketing. Book to be used, Principles of Fruit Growing, by L. H. Bailey. Three 1-hour lectures and one laboratory period per week. First term.

Propagation and Pruning.—A study of budding, grafting, and other methods of plant manipulation and propagation, with a course in the principles and practice of pruning. Three lectures and one laboratory period per week. Second Term.

Small Fruit and Trucking.—A course in the management of small fruit plantations and truck gardens, following much the same order as the orchard course. Particular attention will be given to the construction and management of hot-beds as well as to the principal small fruit and vegetable crops of the section. Book: The Principles of Vegetable Gardening, Bailey. Three lectures and one laboratory period per week. Third term.

FARM MECHANICS.

Wood Work.—This course includes the care and use of wood working tools. It will be made as practical as possible. The majority of the exercises will consist of the construction of articles that will be needed on the farm, such as gates, fences, wagon beds, and other farm conveniences. First term. Two laboratory periods. Alternates with forge work.

Forge Work.—This course will include welding and shaping of iron and handling of steel. Considerable attention will be paid to the making and tempering of small hand tools. A student after taking this course will be able to do all of the ordinary repairs of farm machines and other blacksmithing that will be necessary in farm work. First term. Two laboratory periods per week. Alternates with woodwork.

Farm Machinery.—A study of the principles of construction and operation will be made. Considerable time will be given to studying the individual parts of the different farm machines, by taking them apart and assembling them. Considerable time will be devoted to motors, especially gasoline and steam engines. Third term. Two laboratory periods.

Farm Buildings and Fences.—The strength and adaptability of the materials available for construction will first be determined. Principles of construction will be studied, and considerable time given to planning the different farm buildings with especial regard to convenience and sanitation. The use of concrete on the farm will be pointed out and principles of concrete construction illustrated. Laboratory practice will constitute an important part of the work. One lecture and two laboratory periods per week.

Farm Engineering.—Instruction will be given in the use of the instruments necessary in surveying farm lands, terracing, and locating of roads. Considerable time will be given to the location of farm buildings, roads, terracing, leveling, and tile drainage. One lecture and one laboratory period per week.

Plumbing and Pipe Fitting.—A short course in plumbing and pipe fitting will be given in connection with Farm Buildings. It will consist of the location and planning of the water supply and drainage away from the home, and the proper laying out of a perfectly sanitary system of plumbing for all buildings. The proper assembling and selection of the material needed for a complete job, and the calking of all joints, etc., will be fully studied.

FORESTRY.

A study of forestry as applied to farm woodlands. How to secure a stand of timber, how to thin, to protect, and harvest the forest crop. Second half year. Two 1-hour lecture and one 1-hour practice period.

THREE MONTHS OR WINTER COURSE IN AGRICULTURE.

Short courses of instruction in agriculture and related subjects are offered for the benefit of those who are engaged or expect to engage in farming, and yet who are so situated that they cannot undertake a full college course of study. This course is given during the winter when work is least pressing and the time can best be spared. The course consists principally of the regular work provided during the winter term of the one-year course, with such additional elective subjects as the student finds he can conveniently carry upon consultation with the President of the College.

Those desiring to take this course can familiarize themselves with the nature and character of the work by referring to the schedule of the one-year course for the second term. Considerable extra work may be taken if desired. Certain subjects may also be dropped and others elected to meet the wishes of the student. Requirements for admission to this course and the cost have already been mentioned and need not be again detailed here. Those intending to take this course of instruction are urged to write to the College authorities some time in advance so that suitable arrangements can be made for them.

THE COTTON SCHOOL AND OTHER TEN DAY COURSES.

The first Cotton School ever held was organized by the Georgia State College of Agriculture, January 6 to 17, 1908. Since cotton is the main crop of the state as well as of the South, it is fitting that an attempt should be made to put in pedagogic form the large amount of scientific information which has accumulated during recent years, and which will aid materially in solving many of the farmers' most perplexing problems. The object of the school is to present this information at a minimum of cost and in a concrete form, so that the facts may be applied successfully in every-day work on the farm. Admission to this course is free, a registration fee of $1.00 being charged to cover incidental expenses. The cost to the student therefore, consists of board while in Athens and railroad fare, or from $15.00 to $25.00. This means that practically a free course of instruction in the technique of cotton production is provided for the farmers of Georgia.

The ages of those attending this course range from 18 to 60 years, so that the students entering are a representative body of men. This course is not intended for irresponsible boys, but for those who are actually engaged in farming, and the instruction has been so arranged as to provide the largest amount of useful information in the shortest possible time. The success of the course in 1908 and 1909 means that it will be continued as a permanent feature of the work of the State College of Agriculture. The session for 1910 will open on January 3rd, and continue for ten days. The work will be so arranged that those desiring to remain twenty days may do so. The course of instruction will be essentially as follows:

Ten lectures on the soil, including a discussion of its origin, character, composition and utility for crop production.

Ten lectures on fertilizers, including a discussion of the essential elements of plant food and methods of purchasing, mixing and applying these various constituents to the soil for the purpose of producing maximum crops at a minimum of cost.

Five lectures on the cotton plant. These will include a consideration of the origin and composition of the plant, and conditions most favorable for its growth and development, and will include a discussion of varieties.

Five lectures on seed selection. These include methods of seed selection which may be adopted and successfully practiced by farmers for the improvement of the quality of the staple.

Five lectures on cotton diseases. The principal diseases affecting cotton, the causes so far as known, and the best methods of combating and eradicating them will be discussed.

Five lectures on cotton insects. In these lectures the history, characteristics, and the best methods of controlling the depredations of the various insects attacking the cotton plant will be discussed.

Five lectures on feeding cotton by-products. The best methods of utilizing cotton by-products in the feeding of all classes of farm live stock will be considered in detail.

Five lectures on cotton machinery. The different forms of plows, cultivators and seeders which may be utilized so as to economize labor and increase the efficiency of soil cultivation will be considered.

Instruction in cotton grading. In this course the student will have an opportunity to handle and grade ten or more samples of cotton each day just as the operation is performed on the warehouse floor. The score card will be used for recording his results and the instructor will then compare the various samples with standards and explain to the student wherein he has made a mistake. Cotton grading can be successfully taught and made the means of saving several millions of dollars annually to the farmers of Georgia. This feature of the work will be emphasized more strongly than ever in 1910.

Three lectures on cotton warehousing. These lectures will include a discussion of the business of receiving, handling and shipping cotton.

Cotton seed. The character and quality of the various grades

SCHEDULE OF RECITATIONS FOR THE COTTON SCHOOL

JANUARY 3rd TO 14th INCLUSIVE, 1910

Period	Mon. Jan. 3	Tuesday Jan. 4.	Wednesd'y Jan. 5	Thursday Jan. 6	Friday Jan. 7	Saturday Jan. 8	Monday Jan. 10	Tuesday Jan. 11	Wednesday Jan. 12	Thursday Jan. 13	Friday Jan. 14
9.00 to 9:55	REGISTRATION DAY	Fertilizers for Cotton	Fertilizers for Cotton	Fertilizers for Cotton	Fertilizers for Cotton	Fertilizers for Cotton	Fertilizers for Cotton	Fertilizers for Cotton	Fertilizers for Cotton	Fertilizers for Cotton	Fertilizers for Cotton
9:55 to 10:10		CHAPEL EXERCISES									
10:10 to 11:05		The Cotton Plant	The Cotton Plant	The Cotton Plant	The Cotton Plant	The Cotton Plant	Feeding Cotton By-products	Feeding Cotton By-products	Feeding Cotton By-products	Feeding Cotton By-products	Feeding Cotton By-products
11:05 to 12:00		The Soils of Georgia	The Soils of Georgia	The Soils of Georgia	The Soils of Georgia	The Soils of Georgia	The Soils of Georgia	The Soils of Georgia	The Soils of Georgia	The Soils of Georgia	The Soils of Georgia
12:00 to 12:55		Selecting Seed Cotton	Selecting Seed Cotton	Selecting Seed Cotton	Selecting Seed Cotton	Selecting Seed Cotton	Insect Enemies of Cotton	Insect Enemies of Cotton	Insect Enemies of Cotton	Insect Enemies of Cotton	Insect Enemies of Cotton
12:55 to 1:50		Diseases of Cotton	Diseases of Cotton	Diseases of Cotton	Diseases of Cotton	Diseases of Cotton	Farm Machinery	Farm Machinery	Farm Machinery	Farm Machinery	Farm Machinery
1:50 to 3;10		DINNER HOUR									
3:10 to 5:00		Grading and Scoring Cotton	Grading and Scoring Cotton	Grading and Scoring Cotton	Grading and Scoring Cotton	Grading and Scoring Cotton	Grading and Scoring Cotton	Grading and Scoring Cotton	Grading and Scoring Cotton	Grading and Scoring Cotton	Grading and Scoring Cotton

of seeds will be discussed, and the conditions which influence their value to the farmer and the manufacturer fully explained.

A series of special lectures at night for the students in the Agricultural College proper and the Cotton School will be arranged for.

The schedule of recitations for the cotton school is given on page 136 and is self-explanatory.

The necessity for instruction in cotton industries will be made apparent by the fact that there is a loss in the value of the staple as nature produces it and as placed upon the market of between ten and twenty millions of dollars every year in Georgia. This loss is largely avoidable and will be reduced materially when the handling and grading of cotton is made a part of the knowledge of the farmers in all parts of the state.

It is contemplated that in 1910 a ten days' course of instruction of the same practical character as that provided for in the Cotton School will be offered in animal husbandry, dairying, and horticulture. This will enable farmers who desire to obtain special training in any of the principal lines of agricultural industry to do so at a minimum of cost and during the greatest leisure period of the year.

THE FARMERS' CONFERENCE.

The need of vocational training for farmers constitutes the principal reason why the State College of Agriculture organized a Farmers' Conference from January 18 to 23, 1909. This conference was in the nature of a school for adult farmers and their wives, and it is believed that ultimately representative citizens from every section of the state will attend these meetings and thus carry back each year new and useful information which will be of assistance to the people of their respective communities.

The advisability of holding such a conference is shown by the fact that the fertility of our lands is decreasing, the depredation of insect pests and plant diseases becoming greater each year, and the purchase and use of fertilizers more necessary. How shall the farmer obtain the needed information with reference to these matters save through some such clearing house for agricultural information as the State College of Agriculture affords? Education measures the success and progress of a nation. We have neglected agricultural education in America because of our marvelous natural resources. But nature has rebelled, and now we must inaugurate crop rotations and give greater attention to the development of our live stock industries. There is need, therefore, for the dissemination of definite information relating to farm life and work in order that our present agricultural supremacy as well as the prosperity of the farmer may be assured not only for the present but for the future.

The Conference was a success and will be continued another year. It was organized on the basis of round table talks, one-half day being devoted to the discussion of such subjects as fertilizers, crop rotations, selection and improvement of corn and cotton, live stock husbandry, horticulture, forestry, education, and women's work on the farm. By means of the round table method all attending had an opportunity to add their quota of knowledge, and at the same time participate in the discussions, the most important and beneficial part of such gatherings. More than fifty speakers delivered addresses, and it is needless to say that much benefit will ultimately come from holding an annual gathering such as has been inaugurated. The meeting for 1910 will be held from January 18 to 21, as there is more leisure on the farm at this time than at any other season. Every farmer should take a holiday and accord the same privilege to his wife. That such gatherings are beneficial is shown by the fact that 1,000 farmers attend meetings of this kind in some of the states where the agricultural college has been established on a substantial basis. Our farmers will find it quite as beneficial to them to attend these gatherings as those living in other states. Since the cost will only include railroad fare and one dollar a day for board while in Athens, there can be no question as to the advantages which will accrue to the individual who attends these gatherings and learns about the new facts of agriculture which it is necessary for him to know in order to conduct his business along the most profitable lines.

THE ROAD SCHOOL.

The passage of the Convict Road law made it imperative that a school be held for the purpose of offering instruction in road building to those who have charge of this work in the several counties. The State College of Agriculture, desiring to serve the people, organized a school for this purpose which was held from January 25 to 30, and was attended by more than fifty representatives from about thirty-five counties in the state. Among the subjects discussed during the school were the handling and care of convict labor, the equipment needed for road work and the operation of road machinery; the details of the new convict law; the real worth and value of good roads; how to start and organize a road force for a county or a city; and how to relocate roads, to run levels, to prepare profiles, to lay grades on the profiles, and to calculate the earth work involved. These lectures were given by the most eminent citizens and road engineers in the state, among whom may be mentioned: Judge J. S. Turner of the Prison Commission; Ex-Justice Andrew J. Cobb; Mr. H. L. Collier, Commissioner of Public Works for Atlanta; Prof. C. M. Strahan, Prof. of Civil Engineering in the College of Agriculture; Judge W. F. Eve, of Augusta; Capt. T. P. Stanley, Athens; Capt. J. W. Barnett, City Engineer of Athens; Mr. J. P. High, City Engineer of Brunswick, and Mr. M. O. Eldridge, of the Office of Public Roads, U. S. Department of Agriculture, Washington, D. C.

Demonstrations were made by taking those attending the school to inspect the Clarke County convict camps, and the macadam and sand-clay roads constructed by Clarke county in the vicinity of Athens. These trips were made possible by the courteous action of the Road Commissioners of Clarke county, without whose aid and coöperation the Road School could not have been made a success. The importance of the School can not be emphasized too strongly in view of the large expenditure of money which is likely to be made by the several counties of the state for road construction. This money can be made of permanent value or can be practically thrown away, and that the Road School served an important purpose is illustrated by the following example: Mr. W. S. Holman, in charge of Clarke county roads, has found that certain fields long cultivated contain sand and clay in about the right proportions for top dressing sand-clay roads, and that by using this soil, the cost of this type of road construction may be materially reduced, also the length of time required for the surface to harden, and a road of much greater efficiency secured than by the old method of mixing the sand and clay. This one piece of information placed in the hands of those attending the school was worth thousands of dollars to the state. The Road School will be continued another year if there is sufficient demand for it.

EXTENSION TEACHING.

It is the purpose of the College of Agriculture to aid all educational activities of every kind which are being carried forward in the State. The fulfillment of this purpose is one of its greatest obligations to the state and every effort will be made to further the work of extension teaching. Two great ends are to be subserved by the work of this character: First, the systematizing of the educational activities of the state and the raising of these to a higher level of efficiency. Second, the dissemination of useful knowledge which has accumulated in recent years, but is not now a part of the knowledge of the mass of the people, and which cannot be brought to the attention of adults and those remotely situated from the College save through extension agencies. This work has already been in progress in the University proper to a considerable extent in the past, but it is now desired to broaden the efforts in this direction, and to reach the farmer of limited means in a practical and helpful manner. A distinct extension department has not been organized in connection with the College up to this time simply because of insufficient funds to provide for its maintenance on lines commensurate with the activities it is designed to serve. A good beginning has been made, however, particularly in the line of farmers' institute work.

Speakers will be sent from the College to address all kinds of farmers' gatherings or to discuss subjects of special interest to a given community in the state. The officers of the College are endeavoring to work in coöperation with the County School Commissioners, and lecturers will be sent to teachers' institutes for the purpose of discussing ways and means by which instruction in agriculture, provided for in the public school curriculum, may be rendered more efficient. There is no service which can be rendered the people of the state at this time more important than that of fostering the teaching of the underlying principles of agriculture in the public schools. The teachers are not to blame for the apparent neglect of this subject, as there has been no channel through which they might obtain the needed information. It is hoped that the sending of lecturers to institutes will be of material service in this direction.

Another feature of extension work which the College is fostering in every possible way is correspondence with farmers. Thousands of letters are annually answered, giving definite information relative to fertilizers, soils, crops, care and management of live stock, orchards and gardens. Every farmer in the state is invited to take advantage of the free correspondence course now conducted so extensively by the College, for in this way at the cost of a two cent stamp any individual may obtain information worth a great deal of money to him with the least possible effort, and without the necessity of purchasing expensive books or taking a long trip to acquire the information. The College stands ready through its staff to assist every organization and every indivdual entitled to its service free of cost.

It is the desire and hope of those associated with the work of the College of Agriculture that it may be in position next year to hold a number of what may be properly termed itinerant schools of agriculture for periods of from five to ten days in remote sections of the state. During the continuance of these schools practical lectures will be given on a variety of topics of especial interest to the community, and thus much helpful and valuable information made a part of the knowledge of the residents of that community. In other words, farmers could be brought into intimate contact with the latest information; for instance, relative to spraying, the protection of orchards and gardens, without the time, labor and cost entailed in attending a course in the Agricultural College proper. The benefits of a system of extension teaching of this character can never be accurately estimated, but those who have seen the marvelous improvement in farm practice which has followed in the wake of feeble efforts in this direction in the past realize fully what a systematic extension bureau would accomplish in stimulating an interest in better methods of farming.

THE EDUCATIONAL TRAIN.

Lack of funds prevented the College from operating an Educational Train during 1909. If the railroads will coöperate, however, and the necessary funds are available another train will in all probability be sent out during the latter part of February or the first of March, 1910. This statement is made because of the disappointment expressed by many at the failure of the College to operate a train this year, and this information is due those who may not fully appreciate the reasons why a train was not sent out in 1909. It is believed that in 1910 the exhibit cars can be filled with the products of the College farm and the work of its students, and will thus illustrate in a much more graphic way than would have been possible this year what may be done to ameliorate agricultural conditions in the state, and how a course of instruction in agriculture may be made to benefit the farmer. There can be no question as to the desirability of running a train if the funds are provided to properly equip exhibit cars and maintain it in operation for a sufficient length of time to visit all parts of the state. It is the best type of extension teaching which the College can pursue to bring its services within the reach of thousands of citizens. It is the purpose of the College, therefore, to operate another train as soon as it is in position to do so, and provided the coöperation of the railroads can be secured. When this train is sent out, however, it is felt that it should be superior in every way to the one previously operated, and thus be in position to serve the people much more efficiently.

FARMERS' INSTITUTES.

The Board of Trustees of the University organized a farmers' institute system on January 16, 1903. When the Board of Trustees of the Agricultural College was created the management of the farmers' institutes was transferred to it. For several years the institutes were under the charge of Hon. Harvie Jordan, who, however, found the work so onerous and exacting that he decided to withdraw from it on November 1, 1907, when the work was turned over to the direction of Andrew M. Soule.

Twenty-four institutes were held during the past year under the specific direction of the College. Institutes were offered to six senatorial districts where for various reasons satisfactory arrangements could not be made for a meeting. From one to three speakers were sent to sixteen other points where either farmers' institutes or educational rallies were held. It should not be forgotten that the Educational Train, a feature of the extension department of the College and really constituting one of the most important and effective means of conducting farmers' institutes, visited one hundred and fifty towns in all parts of the state. Since the expenses of operating the Educational Train were defrayed out of a special appropriation, the College has been enabled to hold or to coöperate in holding some forty special meetings in the interest of farming enterprises and agricultural education. It is doubtful if the state has ever been more efficiently covered, or as many people reached and benefitted as during the past year. Fully 150,000 people came out to hear the lectures and discussions and to see the exhibits carried on the train and about 10,000 persons attended the regular meetings. That this trip was of incalculable value to the people of the state is borne out by the correspondence which has come and still comes to the College as a result of this movement.

A list of the places visited last year follows: Rabun Gap, Cornelia, Cordele, Greensboro, Waycross, Washington, Boston, Americus, Adairsville, Rome, Talbotton, Perry, Arlington, Lawrenceville, Lexington, Pelham, Newnan, McRae, Hazlehurst, Lyons, Barnesville, Dublin, Statesboro, Guyton, Calhoun, Gainesville, Commerce, Carrollton, Atlanta, Decatur, Social Circle, Augusta, Milledgeville, Macon, Cuthbert, Dawson, Fort Gaines, Sylvester, Tifton, and Brunswick.

It will thus be seen that the state has been practically coverd during the year, and all senatorial districts would have been reached but for the fact that there is not a good organization in a number of districts, and it will take a little time to work one up. It is a pleasure to acknowledge the cordial coöperation and support extended to the institute work by leading citizens in every section where representatives of the College went; but for their assistance as well as that of the local press the meetings would not have been successfully organized. The list of meetings as enumerated above does not include a large number of points visited by representatives of the College to address, for instance, meetings of the Farmers' Union, and other organizations of agricultural workers.

Representatives will gladly be sent to meetings of any organizations which have the welfare of the farmer at heart, and are endeavoring to disseminate information which will enable him to conduct his operations more successfully. A list of the institute officers follows:

Dist.	**President.**	**County.**	**Postoffice.**
1st	Wm. Cannet	Effingham	Tusculum
2nd	J. L. McLean	Tattnall	Birdford
3rd	Ben Millikin	Wayne	Jesup
4th	D. P. Rose	Camden	Owens Ferry
5th	J. E. W. Smith	Ware	Waycross
6th	W. T. Staten	Lowndes	Valdosta
7th	John G. Stanley	Brooks	Quitman
8th	C. S. Hodges	Decatur	Cyrene
9th	D. W. James	Early	Blakely
10th	W. W. Monk	Worth	Poulan
11th	W. D. Hammock	Randolph	Coleman
12th	W. S. Boyett	Stewart	Lumpkin
13th	R. E. L. Eason	Schley	Ellaville
14th	L. M. Curry	Dodge	Eastman
15th	W. A. Clark	Telfair	Jacksonville
16th	B. B. Linder	Laurens	Dublin
17th	A. M. Deal	Bulloch	Statesboro
18th	J. P. H. Brown	Richmond	Augusta
19th	J. W. Farmer	Taliaferro	Crawfordville
20th	R. N. Lamar	Baldwin	Milledgeville
21st	John T. Williams	Jones	Haddock
22nd			
23rd	J. W. Cheek	Houston	Perry
24th	B. T. Peacock	Marion	Buena Vista
25th	W. S. Bloodworth	Upson	Thomaston
26th	J. G. Minter	Fayette	Fayetteville
27th	M. C. Davis		Rocky Plains
28th	E. Wofford.	Pickens	Jasper
29th	E. A. Callaway	Wilkes	Washington
30th	C. M. Witcher	Madison	Carlton
31st	A. J. McMullan	Hart	Hartwell

Dist.	President.	County.	Postoffice.
32nd	R. H. Baker	Lumpkin	Dahlonega
33rd	L. G. Hardman	Jackson	Commerce
34th	T. A. Pate	Gwinnett	Snellville
35th	F. J. Merriam	Fulton	Atlanta
36th	J. M. Barnes	Meriwether	Bullochville
37th	F. M. Longley	Troup	LaGrange
38th	J. O. Waddell	Polk	Cedartown
39th	E. F. Smith		Otis
40th	M. L. Ledford	Union	Blairsville
41st	J. T. Atherton	Pickens	Jasper
42nd	G. A. Veach	Bartow	Adairsville
43rd	J. A. Hall	Gordon	Calhoun
44th	J. T. Suttle	Walker	Greenbush

Those senatorial districts interested in securing a meeting for 1909 should correspond with the College at the earliest possible date, so that arrangements may be made for the meetings some time in advance. Our staff of instructors is limited in number, and since the institute work is done by them without remuneration, and in addition to their other regular duties, it is necessary that a schedule of meetings be carefully arranged in advance. It is the purpose of the farmers' institute department to coöperate as closely as possible with the district agricultural schools, and to this end meetings have been offered to each of these institutions during the past year. Four of the schools responded and meetings were held at the Fourth District School, at Carrollton; the Third District School, at Americus; the First District School at Statesboro; and the Sixth District School, at Barnesville.

The institute department stands ready to coöperate with any community which desires to have an itinerant school held for a period of three to five days. In an itinerant school, as already pointed out, a complete and thorough discussion of the fertilizer problem, pruning and spraying of fruit trees, the selection and improvement of corn and cotton, forestry problems, live stock feeding and management, may be conducted most effectively. By organizing such schools the institute service may be rendered much more efficient and helpful to the several communities in the state. Correspondence with reference to institutes is invited. If the farmers will coöperate with the College the best work ever done through this arm of the extension service can be accomplished during the year 1909. A printed report containing the principal papers presented during the Farmers' Conference is now being prepared and will be mailed free to any citizen in the state. It contains more than 200 printed pages, and some of the most excellent papers on agriculture and agricultural practice in Georgia that have ever been gathered together in one volume. Every progressive farmer should have a copy of this report.

For further information, write the

GEORGIA STATE COLLEGE OF AGRICULTURE,
University of Georgia,
Athens, Ga.

REGISTER OF STUDENTS 1908-1909

BACHELOR OF SCIENCE IN AGRICULTURE.

Baker, Eugene, 2	Hartwell.
Ball, Frederick Willard, 3	Fitzgerald.
Beggs, John Milton, 1	Pavo.
Bennett, William Tapley, 1	Maxeys.
Bickley, Charles Wellborn, 1	Waverly Hall.
Blanton, Lewis Green, 1	Zetella.
Brinson, Benjamin Lewis, 1	Stillmore.
Chastain, Troy Green, 4	Kennesaw.
Childs, Ross Renfroe, 1	Round Oak.
Cobb, John, 1	Watkinsville.
Dobbs, Willis Franklin, 4	Kennesaw.
Fitzpatrick, Thomas Mallory, 3	Culloden.
Gibson, William Murray, 3	Augusta.
Giles, John Kyrgess, 4	McWhorter.
Harber, Thomas Albert, 3	Commerce.
Lumpkin, Joseph Henry, 1	Athens.
Middlebrooks, Junius Ralph, 1	Mayfield.
Miller, Julian Howell, 2	Athens.
McLenore, Chester Horace, 2	Mt. Vernon.
Nixon, Robert Lee, 4	Bowdon.
Owens, Clyde Clayton, 1	Canon.
Prickett, Hiram Grover, 2	Commerce.
Rast, Loy Edmund, 2	Pidcock.
Rice, George Erskine, 2	Flowery Branch.
Scott, John Irwin, 1	Decatur.
Sell, Edward Scott, 3	Hoschton.
Starr, David Solomon, 4	Canon.
Starr, Silas Henry, 3	Mansfield.
Whatley, William Frederick, 2	Helena.

ELECTIVE STUDENTS IN AGRICULTURE.

Arrington, Homer Newell, 2	Rome.
Bostwick, Henry Green, 4	Bostwick.
Bostwick, Hugh, 4	Bostwick.
Calhoun, DeWitt Talmage, 2	Mount Vernon.
Corker, Palmer Lanier, 2	Waynesboro.
DeLaperriere, Herman Preston, 4	Hoschton.
Holley, Nathaniel Edward, 2	Fort Gaines.
Hutchens, Harold Charles, 2	Cedartown.
King, B. J., 2	Cussetta.
Lamb, Percy Hutchinson, 2	Clapham, Yorkshire, England.

ONE YEAR COURSE IN AGRICULTURE.

Bailey, Clair	Ashburn.
Brock, Hubert Bachman	Athens.
Chipley, Robert LeRoy	Athens.
Converse, William Laraine, Jr.	Valdosta.
Culpepper, Brooks	Talbotton.
Derrick, Frederick Bonner	Clayton.
Jennings, Wilmot Tatum	Cope, S. C.
Kelly, Harrison Barron	Monticello.
King, Carl	Jeffersonville.
Ledbetter, Olin	Lavonia.
Martin, James Key	Commerce.
Martin, William Dillard	Commerce.
Oxford, Charles Evan	Concord.
Ragsdale, Elmo	Homer.
Richardson, Myrick John	Dalton.
Sanford, Davenport	Athens.
Saxon, John Clovis	Farmington.
Shelly, Noah Rozier	Pavo.
Sorrells, William Holman	Athens.
Story, Elias D.	Sycamore.
Thompson, Clyde Clayton	Egypt.
Trafford, Isaac Bert, Jr.	Faceville.
Veal, Charles Edward	Royston.

THE COTTON SCHOOL.

Betts, G. A.	Bogart.
Brown, J. T.	Athens.
Black, W. A.	Flowery Branch.
Blackstock, A. N.	Jefferson.
Broadwell, W. M.	Alpharetta.
Chandler, C. W.	Bishop.
Cowsert, T. C.	Loganville.
Cook, Robert	Fairburn.
Cook, Roy	Fairburn.
Cook, E., Jr.	Pulaski.
Gibson, W. L.	Social Circle.
Glaze, J. J.	Lincolnton.
Gullatt, C. H.	Union City.
King, Albert C.	Covington.
Meets, E. V.	Dublin.
Morton, Jas. W.	Athens.
McCormick, H. J.	Stilesboro.

Morecock, C. M.	Lawrenceville.
McCall, J. E.	Heardmont.
McGee, S. N.	Lawrenceville.
McDougald, W. E.	Clito.
McMullan, L. L.	Hartwell.
Orr, R. C.	Flowery Branch.
Peeples, J. H.	Canon.
Reese, J. C.	Alpharetta.
Russell, Wm. J.	Winder.
Smith, J. Colin	Bellville.
Strickland, C. C.	Monroe.
Thornton, F. G.	Elberton.
Westbrook, W. H.	Gainesville.
Wise, J. P.	Bogart.
Wooten, S. A.	Tignall.
Yaw, Jones	Avalon.

THE ROAD SCHOOL.

Ashfield, R. N.	Milledgeville.
Almond, E. L.	Mansfield.
Barnes, G. S.	Woodstock.
Bell, J. M.	Dawson.
Clay, E. P.	Thomasville.
Chapman, T. S.	Perry.
Childs, Joe	Gray.
Cox, T. R.	
English, W. E.	Warrenton.
Echols, J. H.	Covington.
Eve, W. F.	Augusta.
Freeman, R. J.	Decatur.
Flanders, W. J.	Atlanta.
Finleyson, L. F.	Finleyson.
Farmer, S. V.	Covington.
Green, A. T.	Buford.
Hagan, J. W.	Valdosta.
Hodgson, J. M.	Athens.
Holder, J. N.	Jefferson.
Holley, A. W.	Fort Gaines.
Holloway, R. L.	Milledgeville.
Holman, W. S.	Athens.
Holt, F. W.	Eatonton.
Hughes, H. R.	Sparta.
Jones, T. B.	Hogansville.
Johnson	Lyons.

Knight, W. T.	Dacula.
Little, J. W.	Eatonton.
McClellan, W. B.	Hartwell.
McCurdy, W. S.	Stone Mountain.
McGee, J. H.	Lawrenceville.
McKinley, G. C.	Milledgeville.
McLendon, J. T.	Dawson.
Marshall, M.	Hahira.
Palmer, J. P.	Waynesboro.
Parker, J. H.	Waynesboro.
Peacock, B. T.	Buena Vista.
Pittard, J. T.	Winterville.
Pope, A. T.	Pope's Station.
Rogers, C. R.	Covington.
Sawley, Chas. T.	Griffin.
Stringer, T. H.	Augusta.
Smith, C. R.	Gray.
Tolbert, H. H.	Danielsville.
Townsend, W. R.	Brunswick.
Taylor, Z. H.	Valdosta.
Thomas, D. C.	Louisville.
Tolbert, George	Danielsville.
Tuggle, W. T.	LaGrange.
Veal, G. L.	Lawrenceville.
Vaughn, B. R.	Commerce.
Webb, John P.	Lawrenceville.

STUDENTS IN SCHOOL OF FORESTRY.

Ansley, Bradford D.	Dothan, Ala.
Appleby, George Douglas	Jefferson.
Allen, Linton E.	Brunswick.
Bailey, Harle Grady	Logansville.
Beall, Olin Perdue	Carrollton.
Bennett, Ulric Joseph	Jefferson.
Bostwick, Henry Green	Bostwick.
Bostwick, Hugh	Bostwick.
Branson, Frank Lanier	Athens.
Carter, Edgar Vernon, Jr.	Atlanta.
Chastain, Troy Green	Kennesaw.
Downs, Walter Lee	Watkinsville.
Davison, Henry Armstrong	Woodville.
Franklin, Omer White	Barnesville.
Giles, John Kyrgess	McWhorter.
Gresham, Oscar Milledge	Waynesboro.

Heath, Henry Persons	Talbotton.
Hodgson, Morton Strahan	Athens.
Lowe, Charles Overton	Augusta.
Miller, Eralbert Talmadge	Columbus.
Mize, Theron Neal	Commerce.
Michael, Jerome	Athens.
Montgomery, James	Rome.
McWhorter, William Breese	Royston.
Nixon, Robert Lee	Bowdon.
Palmer, Paul Earl	Sandersville.
Rogers, Dwight Laing	Reidsville.
Robeson, Edward John	Winder.
Rice, George Erskine	Flowery Branch.
Smith, Young Berryman	Atlanta.
Solomons, Israel Abraham, Jr.	Savannah.
Spillers, Grover Cleveland	Musella.
Steele, William Henry, Jr.	LaFayette.
Starr, David Solomon	Canon.
Underwood, Wilbur Hansel	Cars
Van Hasseln, Edmund	Anderson, S. C.
Williams, Arthur Tilman	Jacksonville.
Williams, Lee Hoyt	Hull.
Winburn, William A., Jr.	Savannah.

SUMMARY OF REGISTRATION.
1908-1909.

College of Agriculture:	
B. S. in Agriculture	29
Elective Students	10
One Year Course in Agriculture	23
The Cotton School	33
The Road School	52
School of Forestry	39
Grand Total	186
Counted twice	5
Total registration	181

This list does not include a special class of seven young ladies from the Normal School in Athens, nor the one hundred farmers and some hundred and fifty ladies who attended the conference for farmers and farmers' wives. Thousands of farmers and teachers were met by the representatives of the College at meetings held in all parts of the state during the year, and fully fifteen thousand personal letters have been answered by the staff since last June. This work constitutes a definite part of the instruction being carried on by the State College of Agriculture.

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